EFFECT OF EDUCATION INFRASTRUCTURE ON RURAL DEVELOPMENT IN KATSINA STATE NIGERIA

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EFFECT OF EDUCATION INFRASTRUCTURE ON RURAL DEVELOPMENT IN KATSINA STATE NIGERIA

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ABSTRACT

The purpose of this study was to examine the effect of education infrastructure on rural development by focusing on poverty, employment, agricultural productivity, and healthcare. Additionally, the study also the moderating effect of Non-Governmental Organization (NGO) on the relationship between education infrastructure and rural development in Katsina State Nigeria. This study adopted a cross-section survey design and the data for the study was mainly from primary source through questionnaire. Human capital theory was adopted as the underpinning theory of the study, and based on a theoretical review, a research model was proposed that examines the relationship between the variables. Eight hypotheses were postulated that tested the effect of education infrastructure and the moderating effect of NGOs on rural development (comprising poverty, employment, agricultural productivity, and healthcare). The total population of this study was 5,801,485 out of which 384 are taken as the sample size, using Saunders (2007) sampling method. A total of 434 questionnaires was administered to the respondents, out of which 410 was returned accounting for 95 percent rate of returned. A combination of descriptive and inferential statistics was used in analyzing the data collected, using the Statistical Package for Social Science (SPSS) version 23. Multiple regression was used in analyzing the direct relationship between the independent variable and the dependent variable, whereas hierarchical regression was used in analyzing the moderating effect of the moderating variable on the relationship between the independent variable and the dependent variable. The findings of this study revealed that, education infrastructure have a direct significant relationship on rural development relating to employment, agricultural productivity, and healthcare while there was no significant relationship with poverty. Furthermore, the result of the hierarchical regression (moderation test) establishes that NGOs moderate the relationships between poverty, agricultural productivity, and healthcare, but it did not moderate the relationship with employment. Lastly, based on the findings of this study, the theoretical and practical implication, limitations of the study, conclusions, as well as direction for future research were also provided by this study.

Keywords: Rural development, education infrastructure, NGO, poverty, employment, Nigeria

ABSTRAK

Tujuan kajian ini adalah untuk mengkaji kesan infrastruktur pendidikan ke atas pembangunan luar bandar yang memberi tumpuan kepada kemiskinan, pekerjaan, produktiviti pertanian, dan penjagaan kesihatan. Selain itu, kajian ini juga menyiasat kesan penyederhanaan pertubuhan bukan kerajaan (NGO) mengenai hubungan antara infrastruktur pendidikan dan pembangunan luar bandar di Katsina, Nigeria. Kajian ini menggunakan rekabentuk kaji selidik silang dan data untuk kajian ini adalah dari sumber utama melalui soal selidik. Teori modal manusia telah digunakan sebagai teori pendorong dan berdasarkan kajian teori satu modal penyelidikan dicadangkan yang mengkaji hubungan antara pembolehubah. Lapan hipotesis telah dirumuskan untuk menguji kesan infrastruktur pendidikan dan penyederhanaan NGO mengenai pembangunan luar bandar (terdiri dari kemiskinan, pekerjaan, produktiviti pertanian, dan penjagaan kesihatan). Jumlah populasi adalah 5,801,485 di mana 384 diambil sebagai sampel kajian menggunakan kaedah persampelan Saunders (2007). Sebanyak 434 borang soal kaji selidik telah diedarkan yang mana 410 dikembalikan mewakili 95 peratus. Gabungan statistik deskriptif dan inferensial digunakan untuk menganalisis data yang dikumpulkan menggunakan Pakej Statistik untuk Sains Sosial (SPSS) versi 23. Regresi berganda digunakan dalam menganalisis hubungan langsung antara pembolehubah bebas dan pembolehubah bersandar, manakala regresi hierarki digunakan untuk menganalisis kesan penyederhanaan pembolehubah sederhana pada hubungan antara pembolehubah bebas dan pembolehubah yang bersandar. Penemuan kajian ini mendedahkan bahawa, infrastruktur pendidikan mempunyai hubungan langsung yang signifikan ke atas pembangunan luar bandar yang berkaitan dengan pekerjaan, produktiviti pertanian, dan penjagaan kesihatan manakala tiada hubungan yang signifikan dengan kemiskinan. Hasil daripada regresi hierarki (ujian kesederhanaan) membuktikan bahawa NGO menyederhanakan hubungan antara kemiskinan, produktiviti pertanian dan penjagaan kesihatan, tetapi ia tidak menyederhanakan hubungan dengan pekerjaan. Akhir sekali, berdasarkan penemuan kajian ini, implikasi teoretikal dan praktikal, batasan kajian, kesimpulan, serta cadangan untuk penyelidikan masa akan dating juga disediakan dan dibincangkan.

Kata Kunci: Pembangunan luar bandar, infrastruktur pendidikan, NGO, kemiskinan, pekerjaan, Nigeria

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LIST OF ABBREVIATIONS

ADP	Agricultural Development Project
AID	Acquire Immune Deficiency Syndrome
CAP	Common Agricultural Policy
CBO	Community Based Organization
CBWO	Community Based Women Organization
CSDP	Committee for Social Development Project
CSR	Corporate Social Responsibility
DFRRI	Directorate for Food, Road and Rural Infrastructure
DV	Dependent Variable
EFA	Education for All
EU	European Union
FAO	Food and Agricultural Organization
FRN	Federal Republic of Nigeria
GDP	Gross Domestic Product
HIV	Human Immune Virus
HND	Higher National Diploma
IV	Independent Variable
KMO	Kaiser-Myer Olkin
LGA	Local Government Authority
MGD	Millennium Development Goal
MOE	Ministry of Education
MSE	Micro Small Enterprise
NALD	National Agricultural Land Development Authority
NAPEP	National Poverty Eradication Programme
NCE	National Certificate of Education
ND	National Diploma
NEEDS	National Economic and Development Strategy
NGO	Non-Governmental Organization
NPE	National Policy on education
OECD	Organization for Economic Cooperation and Development

PAB	Practical Action Bangladesh
PLS	Partial Least Square
PTF	Petroleum Trust Fund
RDP	Rural Development Programme
SEM	Structural Equation Modelling
SESP	State Education Strategic Plan
SHG	Self Help Group
SPSS	Statistical Package for Social Sciences
TYAGC	Toda-Yamamoto Granger's Causality
UBE	Universal Basic Education
UNDP	United Nation Development Programme
UNESCO	United Nation Education, Social and Cultural Organization
USA	United State of America
USD	United State Dollar

CHAPTER ONE

INTRODUCTION

1.1 Introduction

Rural development which is a subset of national development, encompasses economic, political, and social enhancement. It is a development strategy which focused on how to sustainably enhance the quality of lives of the rural peoples through the provision of basic socio-economic infrastructures like schools, improved agricultural implements, healthcare services, which will subsequently lead to employment generation and poverty reduction. It is also, seen as a strategy for improving rural peoples' livelihood through access to good road, electricity, pipe born water and sanitation facilities (Aref, 2011).

Rural development has become a focal issue internationally during the past decades, from 1960s to 70s, and through 80s. This era had witnessed the emergence of international organizations at the forefront in initiating and promoting rural development strategies for the less income earning economies. Some of these organizations include, Food and Agricultural Organization (FAO), United Nation Development Programme (UNDP), United Nation Education, Social and Cultural Organization (UNESCO). These international organization in collaboration with some governments of low-income countries, initiate and execute developmental projects in those countries. For example, in Nigeria, the Nigerian government in collaboration with FAO and World Bank funded the

Agricultural Development Project (ADP) and Rural Development Programme (RDP) in Funtua Katsina State (Akpan, 2012; Gana, 2012; Olujimi & Olarenwaju (2012).

However, despite these collaborative efforts, which were majorly agriculture centered programmes, the rural area remained neglected and underdeveloped which inevitably led to the deterioration of the living condition of the rural people that result to high level of poverty and unemployment which stand at 80 percent and 63 percent, and agricultural productivity has also fallen, and on the health status, the life expectancy for adult is 53 percent and the child mortality stand at 101.4 to 1000 (Samuel, 2013; NBS, 2015). The problems of poverty, unemployment, low agricultural productivity and low health status which were the main the issues in rural development were attributed to lack of adequate provision of education infrastructure that will stimulate both individual and community development (Vincent ,2014; Brown 2011; Kagoda, 2012; Asodike ,2014). The above issues could have been tackled if due attention has been given to adequate provision of education infrastructure.

Education is the most viable instrument and the bedrock of development of any nation, as asserted by Aref (2012), no nation can develop beyond its educational attainment. Unfortunately, education in Nigeria is faced with a myriad of challenges among which were insufficient education infrastructure, poor funding, dropout, and corruption. The decay in the education system which cut across polytechnics, colleges of education and public universities had threatened the foundation upon which these institutions were established and was attributed to inadequate provision of education infrastructure.

At the basic educational level, Nigerian schools were faced with acute shortage of education infrastructures. For example, because of the deterioration of classroom facilities, the classes use to be overcrowded and undue congestion, where a classroom that was designed for 40 pupils, it will be forced to accommodate 100 pupils and above. The average ratio of teacher and student was around 1:120 in most public primary and secondary school in Nigeria. Nigeria has a total of 87,941 primary schools, and 7,129 government owned junior secondary schools (NBS, 2016). Similarly, Nigeria has a total population of about 24,422,918 school age children or pupils across the primary schools. The number of classrooms constructed at the primary school level in 2010 was 59,007 representing a deficit of 11,295, similarly, at the junior secondary school, the rate of the construction stands at 36.6 percent representing a deficit of 64 percent (EFA, 2014; NBS, 2016). Although, most primary and secondary school lack basic infrastructure, poor funding of education was one of the main factors which stagnated development of education in Nigeria.

Poor funding of education by the three tiers of government federal, state and local government was another challenge that education sector faces in Nigeria. It is worrisome that on the average, Nigeria for the past decades have not spend more than 9 percent of its national budget on education when less richer countries like Botswana spend 19 percent, Swaziland 24 percent, Kenya 23 percent, Ghana 31 percent, South Africa 25 percent and Uganda 27 percent. The allocation for the year 2018 to education sector was only 7.4 percent of the total budget of the federal government which was below the UN bench mark of 26 percent. Similarly, previous allocations to education has fallen short of 13 percent. For instance, the allocation to the education was 8 percent in 2001, and in 2004, the

allocation to education was 5.6 percent, in 2010 7, 19 percent, in 2011, 9.32 percent, in 2012, 9.86, in 2013, 10.15 percent, in 2014, 10.54 percent, in 2015, 10.78, in 2016, 7.92, in 2017, 4. 0 percent, and in 2018, 7 percent (Adedigba, 2018). Even though, poor funding contributes to the deterioration of education in Nigeria, corruption is another factor that hinders the development of education in Nigeria.

Corruption is pervasive in Nigeria as it spread all over the sphere of human endeavor, affecting every sectors of the government as well as the education sector. The most devastating effect and inconsequential cost of corruption that afflict the education sector was the waste of human and financial resources leading to political and economic instability. For example, officials of SUBEB criminally and outrageously spent 800 million in executing a one-day training workshop for teachers. Similarly, according to Mumuni and Sweeney (2013), 3.3 billion had been lost in 2005 and 2006 to illegal and unauthorized utilization of funds in the education sector. Funds and resources meant for the enhancement of education infrastructure as well as overhead payments, maintenance, and operational management of schools and institutions were being redirected and misappropriated. Similarly, much of the fund for the running of primary schools, secondary schools, and tertiary institutions were mis-appropriated by the officials for personal purposes (Aluede, 2012). Although, corruption has been one of the main factors that retard the development of Nigeria as a nation, school dropout is another issue that derail the development of education in Nigeria.

Dropout of school was another syndrome that bedeviled the education sector in Nigeria, as figures indicated, in Sub-Saharan Africa countries around 89 million youth, ages

between 12-24 years, were out of school. Out of the 89 million, 10.5 million were from Nigeria which accounted for 30 percent of pupils drop out of primary school and 46 percent out of secondary schools (FME, 2015). Hawking and early marriage, especially among the child-girl were identified as some of the reasons that pushes children from dropping out of school both in the rural and urban areas. On the education infrastructure, inadequate provision of education infrastructure of is a general phenomenon that is not peculiar to one region or state Katsina state inclusive.

Currently, Katsina State has 2,188 primary schools with pupils' enrolment of 1,351,032 (825,120 males and 525,912 females), 172 Junior Secondary Schools and 160 Senior Secondary Schools) with an estimated enrolment of 156,979 (100,967 males and 56,009 females) and 96,899 (73,706 males and 23,193 females), respectively. There are also 13 Special Science, Technical and Vocational Secondary Schools and 13 Tertiary Institutions which include three Universities (SME, 2016).

Typically, insufficient educational facilities in schools has been identified as a serious challenge that made it difficult to access meaningful educational opportunities. A recent survey by the State ministry of education revealed that, only about 65 percent of primary school classes, and about 50 percent each of JSS and SSS classes have adequate classroom furnitures. As for water facilities, only 708 water points were available for 2188 schools (SME, 2016). At the pre-school level, the number of ECCDE learning centers is grossly inadequate which hindered access. Currently, only 345 ECCDE centers exist, against 2,272 estimated number required State-wide. Moreover, only 20 percent of the available centers have access to / or operate an appropriate curriculum. For example, provision of

classrooms in the primary, JSS and SSS stood at 45 percent, 72 percent and 85 percent of total requirement. Again, the supply of pupils' furniture in these classrooms as at 2009/2010 stood at 65 percent for primary schools and 50 percent each for junior and senior secondary schools in the state (SME, 2016). On the condition of the learning environment, the situation was characterized by the poor state of those facilities.

Similarly, the supply of toilet facilities is also another challenge area. There are for instance, a total of 6974 toilets in all primary schools in the state, for an enrolment of 1,351,032. Water and power supply to schools requires attention as well. There are for instance only 708 water points (comprising of 28 pipe-borne water points, 193 boreholes, and 68 wells in junior and senior secondary schools) against 1399 required (SME, 2016). The supply of health facilities also needs attention. At present, there are only 9 and 12 clinics in the 172 junior secondary schools and 160 senior secondary schools in the state respectively. Again, on electricity, only 121 junior and 87 senior secondary schools are linked to the national grid, while 7 junior and 8 senior secondary schools have alternative source of power. On the issue of school dropout, Katsina state, like other state in the federation, Katsina was faced with the problem of school dropout for both primary and secondary school. For instance, in 2014, the number of primary schools 5 was 228,055 and those that proceeded to class 6 had dropped to 225,536, and for those that proceed to JSS was 56,559 respectively (Usman,2013; SME,2016). Apart from the above elaborated issues pertaining to inadequate supply of education infrastructure, budgetary allocation to education is another problem even though, Katsina State has made a significant effort in allocating a reasonable amount to education sector (Bennell, 2014; Olutola, 2018).

On the budgetary allocation to education, education sector in the state is funded essentially by the government and supported by domestic and international donors' agencies such as the UNICEF, DFID, ETF, UBEC, KEF and several NGOs, CBOs and CSOs. Katsina has made a significant effort as the allocation was above the UN bench mark of 26 percent. For instance, 36.32 percent, 27.26 percent and 29 percent were allocated to education in the years 2007, 2008 and 2009 (Olasehinde, 2014). However, despite government improved budgetary allocation, delay in disbursement of funds for discharging of important services and projects in the education sector as well as budget performance is very low (Olasehinde,2014). There was also withdrawal/drying up of donor agencies' support to the education sector such as UNFPA and UNDP (SUBEB, 2017).

Education infrastructure has been averred as one of the factors that can address the problem of rural development in developing countries of the world (Musa, 2013). This has been identified in so many studies as one of the most viable mechanism for rural development ((Abedi, 2011; Foster, 2013; Chambers, 2014; Oni, 2014). Aref (2011) asserts that, one year of schooling increases earning by 10 percent, and an increase of one year of schooling, enhances an individual chance of getting away from poverty by 20 percent. Aref (2011) further, opined that, one additional year of total education in a country, enlarges the per capita income of that nation's growth by 0.5 percent. Similarly, an additional year of schooling, increases the chances of being employ by 40 percent for secondary school pupil, 10 percent for primary school leavers, and 50 percent for university graduate (Salau, 2013). On agricultural productivity, recent studies by Kumar, 2012 and Morarji, (2014) have shown that, additional year of school attainment has the

tendency of boosting farmer's capacity by 40 percent (Okoronko, 2014). While on the health aspect, secondary school attainment tends to increase individual health status by 40 percent, it also increases health awareness among women by 30 percent (Olojede, 2013). NGOs on the other hand, has not been given adequate attention by researchers especially in Africa, despite the potentialities they possess as a development alternative.

From the perspective of the World Bank (2015), NGOs can be perceived as those organizations, groups and institutions completely independent of government and they are primarily non-commercial, but rather are humanitarian and cooperative in pursuing their objective. They are mostly private agencies or third sector organization predominantly in industrial countries that assist in supporting international development. NGOs can be perceived from a wider perspective to include those charitable and religious organization that offer assistance in terms of fund mobilization for development as well as distribution of food, family planning services and promotion of community organization. NGOs also comprises independent cooperative, community organizations, water user's associations, community women groups, pastoral organizations, and citizen group who advocate and raise awareness regarding government policy are also perceived as NGOs.

The United Nation (UN1996/297) resolution recognized the important of NGOs in development effort which as a result has contributed to the exponential rise of NGOs globally. The number of NGOs was estimated to be around 10 million worldwide that comprises of operational NGOs, advocacy NGOs and humanitarian NGO (United Nation, 2017). Similarly, in the USA, an estimated 1.5 million domestic and foreign NGOs operated in 2017 that focus mainly on advocacy and humanitarian activities. Russia had

about 277,000 NGOs in 2008, which mostly engage in advocation campaign, while a substantial number of these NGOs also engage in development project such as building bridges and construction of schools and healthcare facilities. India is estimated to have had around 2 million NGOs in 2009, the current number of NGOs is not yet available, but the existing ones were mostly operational NGOs that focus on rural development through poverty alleviation program and skill acquisition training, as well as assisting in educational and healthcare related issues. China is estimated to have approximately 440,000 officially registered NGOs that, mostly focus on improving the standard living of the rural people through improved agricultural practices. In Africa, there are about 60,000 registered NGOs operating in the continent among which Kenya has the highest number of NGOs having 12,000 NGOs that work in healthcare, education, human rights and civic engagement (United Nation, 2017).

The role of NGOs in both urban and rural development has been recognized by the United Nation and the World Bank by officially listing some NGOs as development partners. NGOs have played a significant and key role in advocating for sustainable development at the international level which led to the initiation of Millennium Development Goal (MDG) in the beginning of the 1990s. NGOs have been one of the major campaigners for the eradication of poverty especially in low income countries as well as agitation for the eradication of hunger, diseases, environmental degradation, and employment generation (United Nation, 2017).

The important roles that NGOs plays in rural development in developing countries in such areas as in poverty reduction, employment generation, agricultural productivity and

healthcare services cannot be overemphasized. For example, Ishata (2017) investigated the contribution of Grameen Bank and BRAC to poverty alleviation in Bangladesh and the study found that, these two NGOs were able to enroll 8.64 million rural people into their loan initiative, while on employment generation, the NGOs were able to employs 65,000 artists and have also hired over 100,000 employees with which 70 percent are women, also BRAK had expanded its frontier beyond Bangladesh to 10 other countries and 3 continents and had assisted over 120 million people around the globe to be self-employed.

On agricultural productivity and healthcare services, NGOs have made a significant impact on the lives of the rural people, for instance in a study by Ochijenu (2006) in Kogi State Nigeria, it was found that, NGOs contributed significantly to the development of agriculture in the areas of farming method application, farmers participation in initiation and execution of programs, provision of improved seed, new varieties of crops, equipment operation services, introduction of high breeds livestock, organic fertilizers, new storage system, tractor lending services, insecticides and improved oil palm seedlings, as well as provision of information and communication technology facilities to assist in disseminating of new innovation and information pertaining to weather forecast, credit facilitation and market information. While on healthcare services, for example in Angola, Morten (2012) found that, about 80 international NGOs staff were deployed in 9 of the 18 provinces of Angola providing support to primary and secondary healthcare services where about over one million refugees were taken care of during Rwandan conflict of 1994. Likewise, in Bangladesh in the areas of poverty reduction, employment generation,

agricultural productivity and healthcare service, the UN had attested to the contribution made by NGOs in those areas (Lewis, 2009; Ravillion, 2012; Granvik, 2013).

Academic study on NGOs was new as the first set of academic literature on NGOs emerged in 1990s such as the work of Clark (1990), Korten, (1991), and Fowler, (1997). While these works were mainly case studies in approach, significant number of these studies were conducted in the western context, which view rural development from a different context, thus creating a vacuum to be fill from other contextual perspective such as Africa and Asia. The following decades witnessed a tremendous increase of literature on NGO from both Europe and Asia such as the works of Hilhorst, (2003), and Igoe & Kelsall, (2005). The second-generation scholars were also skewed to the west, while in Africa, study on NGOs was scanty up to this time as to the knowledge of the scholar, only few studies were conducted on NGOs in Africa such as study by Vivian (1994), and recently by Bright (2013) in Ghana. Based on this background, this present study was conducted in West Africa Nigeria, to fill this vacuum that was created.

It is against the above backdrop, that this study examines the effect of education infrastructure on rural development (poverty, employment, and agricultural productivity, healthcare) and NGOs as the moderating variable in Katsina State, Nigeria. Nigeria is the expanse area of this study, and it's located in West Africa with a population of 180 million. On the other hand, Katsina State which is the specific area of this study was carved out of Kaduna State on September 23rd, 1987 with three senatorial districts and 34 local governments' areas. According to 2006 census, Katsina State has a population of about 5,801,584, comprising 2,948,279 males, and 2,853,305 females (National Population

Census, 2006). However, this population was projected to grow to 7,000,000 by the year 2015. Katsina is situated between latitudes 11°08'N and 13°22'N and longitudes 6°52'E and 9°20'E and it occupies an area of about 24,194 square kilometers (Khan & Ayoola, 2014; NBS, 2015).

1.2 Problem Statement

The problem of rural underdevelopment has remained an issue of utmost concern for both developed and low-income earning countries (Akpan 2012). At the international arena, effort has been made to tackle the issue of rural development which led to the formulation of various rural development programs such as ADP, and recently Millennium Development Goals (MDGs) all in an effort to accelerate the development of the areas. In spite of these efforts made by governments and international organizations, the problem of rural under development in Nigeria still remains a mirage, as rural areas have become home to poverty, unemployment, low agricultural productivity and low life expectancy (NBS, 2015).

Poverty is one of the main features of rural under development. Findings from a study by Saleh (2013) indicates that, the prevalence of poverty in the rural areas had risen from 62.6 percent in 2010 to 62.8 percent in 2011 and, 71.5 percent in 2012. Similarly, Odior (2014) assesses the effect of government expenditure on education and poverty reduction in relation to achieving MGDs in Nigeria. The study adopted a simulation approach and data were collected from social accounting matrix (SAM), CBN, and NBS, and were analyzed through computable general equilibrium (CGE). The findings from the analysis shows that, Nigeria will not be able to achieve the MGDs in the areas of poverty reduction,

and education by the year 2015. The study also reveals, the existence of direct relationship between government spending and education, as an increase in government spending on education is vital for achieving economic growth and poverty reduction in Nigeria.

Although, there are studies on rural poverty and unemployment (Ijaiya, 2011; Hassan, 2012; Okoroafor, 2013; Khan, 2015; Ayinde, 2008; Iwuamadi, 2010), Thus, little attempt has been made to study the effect of education infrastructure on poverty reduction and employment generation empirically, within the Nigerian state context. Unemployment is one of the problems that characterized the rural communities in Nigeria.

Unemployment is another phenomenon of rural underdevelopment as the rate of unemployment in the rural areas has been increasing. For example, in Nigeria, the rate of unemployment in the rural areas in 2010 was 20 percent, in 2011 was 25 percent, in 2012 30 percent, in 2014 29 percent, in 2015 30 percent, in 2016 31 percent, and in 2017 40 percent. A couple of studies have been conducted especially, in European and Asian contexts which proved that, lack of education result to unemployment especially in the rural areas (Apata, etal,2010; Akinsanya, 2011; Morales, 2012; Hong, 2013; Williams, 2013; Hassan, 2014). Although, over the past decades there has been a substantial numbers of studies on employment in relation to education infrastructure within the context of rural development such as (Oguntade, & Das, 2011; Iancu & Rajashekharappa, 2012; Kim & Mood, 2013; Kalugina& Gangopadhyay, 2014), however, most of these studies were conducted qualitatively, and as such, there is need for a quantitative study on employment in relation to education infrastructure within the context of Africa for possible generalization (Okezie,2011).

On agricultural productivity, agriculture has been the mainstay of the rural economy, however, its practice is still at the primitive level leading to low level of productivity. Previous researchers on rural development, such as Dethier (2012; Chimhowu, 2013; Chambers, 2014; Petrascu, 2015; Parihar, 2016), have focused on the development of agriculture as the means of developing the rural areas. However, recent studies such Knickel (2009; Sicilian, 2012; Hamzel, 2014) have found a significant and positive relationship between education infrastructure and agricultural productivity. This present study, therefore, adopt education infrastructure as a viable instrument for improved agricultural productivity using the quantitative approach and within the context of rural development. Similarly, healthcare has been a major challenge in the rural areas due to high rate of illiteracy in the rural areas.

Healthcare services is also another component of rural development that have been neglected by the government, leaving the human healthcare system in a state of deterioration (Ravallion 2010; Garidou 2013). The life expectancy of an adult in Nigeria is 52 years, while the infant mortality rate per 1000 is 101.4 (Suleiman, 2015). The above problems have been attributed to lack of education infrastructure, which equips people with necessary knowledge on how to take care of their health. Previous studies have indicated the existence of significant relationship between education infrastructure and health matters. For example, a study by Ndjinga (2011), shows that mothers with secondary education, have saved the life of their children by 70 percent more than those without secondary education.

Despite the abundance of studies on rural development in relation to poverty reduction, agricultural productivity, and healthcare, most of these studies were qualitative in approach, and were mostly conducted in Western and Asian context (Adedeji &Olagunju, 2014; Kefle, 2012; Econg, 2013; Adepoju, 2013; Pawa, 2014, Obayelu, 2014; Olaseni, 2012). This study on its part, was conducted from a different context and approach in order to fill the contextual and methodological gap. Furthermore, there were little studies that empirically investigate the relationship between education infrastructure and rural development (poverty, employment, agricultural productivity and healthcare). Finding from Preda (2014) is in consistent with the above assertion where it was found in India that education is significantly related to rural development.

Hence, conducting a study on rural development, by empirically investigating the relationship between education and rural development (poverty, employment, agricultural productivity, and healthcare), in a single study is a contribution to the body of knowledge, as well as filling the existing gap in the literature (Wiggan, 2007; Barrett, 2010; Obanga, 2012). On the other hand, NGOs as an alternative development has not been given due attention by researchers despite its potentiality of being a development partner particularly in Africa.

NGOs around the globe, were estimated to be around 10 million which comprises of operational NGOs, advocacy NGOs and humanitarian NGOs (Bebbingto & Farrington (2017). In a study conducted by Bingen (2015), it was revealed that, about 1.5 million domestic and foreign NGOs operated in the United States in 2014 that focus mainly on advocacy and humanitarian activities. Similarly, in a similar study by Garnevska (2011),

Russia was found to have about 277,000 NGOs in 2008 which mostly engage in advocacy campaign, while a substantial number of these NGOs were also engaged in development project like building bridges and construction of school and healthcare facilities (United Nation ,2017).

In another related study conducted by Mandirahwe (2016), it was found that, India was estimated to have around 2 million NGOs in 2009, even though, the current number of NGOs is not yet available, but the existing ones were mostly operational NGOs that focus on rural development, such as in poverty alleviation program, and skill acquisition training as well as assisting in educational and healthcare related issues. Zhang (2015) found that, China was estimated to have approximately 440,000 officially registered NGOs that mostly focus on improving the standard living of the rural people through improved agricultural practices. In Africa, there are about 60,000 registered NGOs operating in the continent among which Kenya has the highest number of NGOs having 12,000 NGOs that work in healthcare, education, human rights, and civic engagement (Ochijenu, 2006; Ndjinga 2011; Kankya,2013; Bright, 2013).

As earlier mention, despite the potentiality of NGOs as a development partner, little research was done on NGOs in relation to development particularly in Africa (Vivian, 1994; Kankya, 2013; Zhang, 2014; Dardas & Hayes, 2015; Yagub, 2015). Hence, this study by using NGOs as a moderator on the relationship between education infrastructure and rural development (poverty, employment, agricultural productivity and healthcare) has serves as a unique contribution of the study to the literature in rural development which as to the knowledge of the researcher there was no single study that uses NGOs as a

moderator in development studies. Therefore, this study filled this vacum by incorporating NGOs as a moderator in the relationships between education infrastructure and rural development in Katsina State, Nigeria. Based on the above discussions, the below research questions were formulated to guide the direction of the research.

1.3 Research Questions

i. What is the level of rural development (poverty, employment, agricultural productivity, healthcare in Katsina State?

ii. Is there any significant relationship between education infrastructure and rural development (poverty, employment, agricultural productivity, healthcare) in Katsina State?

iii. Does NGOs moderates the relationship between education infrastructure and rural development (poverty, employment, and agricultural productivity, healthcare) in Katsina State?

1.4 Objectives of the Study

The objective of this study is to examine the effect of education infrastructure on rural development (poverty, employment, agricultural productivity, healthcare) as well as the moderating effect of NGOs on the relationship between education infrastructure and rural development (poverty, employment, agricultural productivity, healthcare). Specifically, the objectives of this study focused on examining the followings:

i. To determine the level of rural development (poverty, employment, agricultural productivity, healthcare) in Katsina State

ii. To examine the relationship between education infrastructure and rural development (poverty, employment, agricultural productivity, healthcare) in Katsina State

iii. To determine the moderating effect of NGOs on the relationship between education infrastructure and rural development (poverty, employment, agricultural productivity, healthcare) in Katsina State

1.5 Scope and Limitation of the Study

This study investigates the effect of education infrastructure on rural development and the moderating effect of NGOs on this relationship in Katsina State of Nigeria. Specifically, the study investigates the effect of education infrastructure on poverty, employment, self-employment, agricultural productivity, and healthcare. Additionally, the study investigates the moderating effect of NGOs on the relationship between education infrastructure and rural development (poverty, employment, self-employment, agricultural productivity, and healthcare) in Katsina State of Nigeria.

Rural areas today in Nigeria are characterized by high rates of poverty, unemployment, and other healthcare related problems, which calls for a new approach at tackling this menace, as the past efforts have proved abortive. In line with this contention, this study examines the efficacy of education infrastructure and NGOs as a panacea to the problems confronting rural development.

Katsina State which is the location of this study had been selected because, it happened to be one of the States in the North-Western geopolitical zones of Nigeria with the highest number of rural people (Bambale, 2013). Of the Nigerian population of over 140 million, more than 40 million resides in this zone, accounting for 27.27 percent of the total population of the country of which Katsina state, has about 5,801,584 people as its total population (NPC, 2006). Additionally, Katsina State is fourth in terms of human population after Kano, Lagos, and Kaduna States (National Census 2006).

Moreover, Katsina state has a significant portion of its population residing in the rural areas, which accounted for about 80 percent of the population (NBS, 2014). Similarly, Katsina state has the second highest prevalence of poverty rate amongst all states in Nigeria, with a record of about 74.5 of percent poverty rate index in 2015 (NBS, 2015). Also, a survey by Katsina state CSDP (2013) revealed, a high incidence of unemployment, especially among the youth, which stands at about 50 percent of the entire population of the State. Agricultural productivity level in Katsina state is as low as 40 percent, and life the expectancy for an adult standing at 52 years, while child mortality ratio is at 1,000 infants to 101.4 (CSDP, 2013). Similarly, it was also reported that, among the rural communities of the State, a substantial number of the rural people cannot afford some of the essential's human needs, such as Medicare, shelter, clothing, and food (CSDP, 2013).

In respect of the variables such as agriculture, poverty, employment, self-employment and health care, multiple measurements criteria were considered in determining the relationships between the independent variables and the dependent variable as well as the moderating variable. Geographically, the scope of the survey extends to six local

government areas of the states. These are: Danja, Sabuwa Jibia, Batagarawa, Daura, and Mashi. Sample respondents were drawn from these local governments, using multi-stage sampling techniques, beginning from the Senatorial district, to Local the government area. The choice of Nigeria in the Sub-Saharan African countries was predicated on the fact that, Nigeria is a low-income economy, which is struggling to meet up with other developing nations, like Brazil, South Africa, Malaysia and Singapore. The poverty and unemployment rates in Nigeria stand at 70 and 50 percent respectively (NBS, 2013).

1.6 Theoretical Framework

The purpose of developing theoretical framework was to explain why and how the variables under study relate to one another based on theory and model (Bhatti,2015). The explanation of theory and model should be based on logical explanation of the researcher as supported by previous studies. In this regard, literature review plays an important role in assisting the researcher to develop a theoretical framework for the study.

1.6.1 The underpinning theory: Human capital theory

The human capital theory is a general theory that can be applied at all developmental levels, be it at individual, group or societal level. Becker (1964) was the acclaimed proponent of the human capital theory, however, other scholars, such as Mincer (1974) and Spence (2002) popularized the theory. The theory argued that, individuals or groups who possess a greater level of education will achieve greater development outcomes than those with a lower level of education (Bowlus, &Dawson, 2012).

The main assumption of this theory was that, the most viable mechanism of national development in any society lies on how much the society developed its citizens in terms

of education (Alika, 2014). Education does not only widen individual choice, but rather, an educated individual is seen as a tool necessary for industrial development and economic growth. The human capital theory provides an essential reason for substantial allocation of resources on education, in both low and middle-income countries. The model was predicated on the assumption of benefit or return of investment on education, at individual and group, as well as at macro and micro levels. For an individual, human capital investment is seen as a way of providing returns in form of individual attainment of social and economic prosperity (Mohun, 2010).

Furthermore, a study by Luca (2013) has shown the contribution of human capital to economic growth in the USA between 1919 and 1957, which ranges between 36 percent and 70 percent of the unexplained factors of growth. Moreover, the source of underdevelopment or economic stagnation of low-income countries was attributed to lack of human capital development in terms of education. The human capital theory has been widely accepted as a tool or model for human capital development which has been used in tackling multi-faceted issues of rural underdevelopment such as poverty, unemployment, low agricultural productivity and health related issues (Dawson, 2012; Marvel, 2013). Similarly, past studies have established a relationship between human capital and rural development in terms of poverty reduction and employment generation (Ravallion, & Seth 2012).

Theoretically, the justification for the use of these models was based on the assumption that education is an enabler of general development. Education is the key aspect of general human capital development, as it increases a person's general stock of information and

skills, as well as opportunities. For example, in a study conducted by Baum, Locke, and Smith (2001), which examined the performance of biotechnology firms, the study found that, firm owners with master's degrees or higher qualifications, had faster employment and revenue growth than those who are not well educated. Other studies such as Gimeno et al. (1997; Wiklund& Shepherd (2008) found that, more years of schooling were significantly related to job opportunities and success in life. Also, studies on human capital development has provided an evidence of the link between knowledge/skill's on poverty reduction, self- employment, employment, agricultural productivity and healthcare (EFA, 2014).

Similarly, findings by Gaddis and Klasen (2012) was in line with the theoretical literature, which found that, 30 percent of female with, at least primary school education, gains employment, and the percentage is likely to increase to 48 percent, for females with secondary education. This increment confirms that, people with secondary education, are more inclined to being self-employed by 50 percent higher than those with only primary education (Apataetal.,2010). Similarly, Hamza (2014) found that, people with secondary education improve their agricultural productivity by 59 percent above those with lower education. In terms of healthcare, findings by Fuch (2010) revealed that, mothers with secondary education have saved the life of their children by 70 percent in Nigeria than those with no or lower education.

Additionally, a study conducted by Robinson and Sexton (1994), using the census' data reveals that, education increases the likelihood of becoming self-employed by 40 percent over those without or with lower education. Furthermore, Becker (1964) argues that, as

people invest more in human capital, the chances are that, they may earns a satisfactory job that might lead to more earnings. The spillover of education effect is not confined to one segment of development alone, but rather, its effect, affects virtually all segments of human development, as this appears to be a chain reaction. Based on the above justification, the human capital theory is therefore adopted as the underpinning theory for this study.

1.6.2 Relevance of the theory to the study

The human capital theory is regarded as a general theory of development both at the individual, group and societal levels. This conforms to the conceptualization of development by Seer (1969) who asserts that, development should center on man. Hence, overall development of individual should be the focus of development as well as his total wellbeing. From this assertion, it is apparent that developmental efforts that is short of man as the central focal point are bound to fail, because man has to be developed first before developing the structures.

The human capital theory is very much suited for this study, because its spillover and dynamism is efficacious in influencing so many aspects of human development, such as poverty reduction, employment, self-employment, agricultural productivity, and healthcare, which are the core dimensions of human development. Poverty reduction, employment, agricultural productivity, and healthcare are the elements that constitutes the dimensions of rural development as used in this research. Additionally, the establisnment of the relationship among the variables of this study, and relation to the role of human

capital theory in the development of the rural areas is well suited in explaining educational outcomes (Duh, 2014).

The contribution of human capital theory to rural as well as national development in the first decades has attracted several theoretical and empirical investigations. An instance of this was a report on the finding from OECD (2015) countries which indicates that, those with higher level of education experienced rapid growth from the 1960s upward than those with a low level of education (Alika 2014). Whereas, in the developing countries, acquiring primary and secondary education skills tends to expand individual horizon in terms of growth and development, in the developed economy especially, in the OECD countries, emphasis is given more to the acquisition of tertiary education skills.

Furthermore, previous studies have shown that, no country can develop beyond its educational attainment (Alika (2014). Hence, the more educated people are in a country, the more developed that country is bound to be. From the above literature and empirical findings, the human capital theory is therefore, adopted for this study as its dynamism can be applied to explain all the dimensions of the variables under study.

1.7 Research Framework

A framework as opined by Sekaran (2013) is the basis upon which the entire study is built on, and from which the entire deductive and inductive research work is based. It is a broad principles, and ideas gotten from relevant fields of inquiry that are used to form subsequent presentations. A framework is a systematic association of variable within a given research or study that attempts to answer a research question that was developed

through literature review and tested statistically using any form of statistical packages, such as PLS and SPSS.

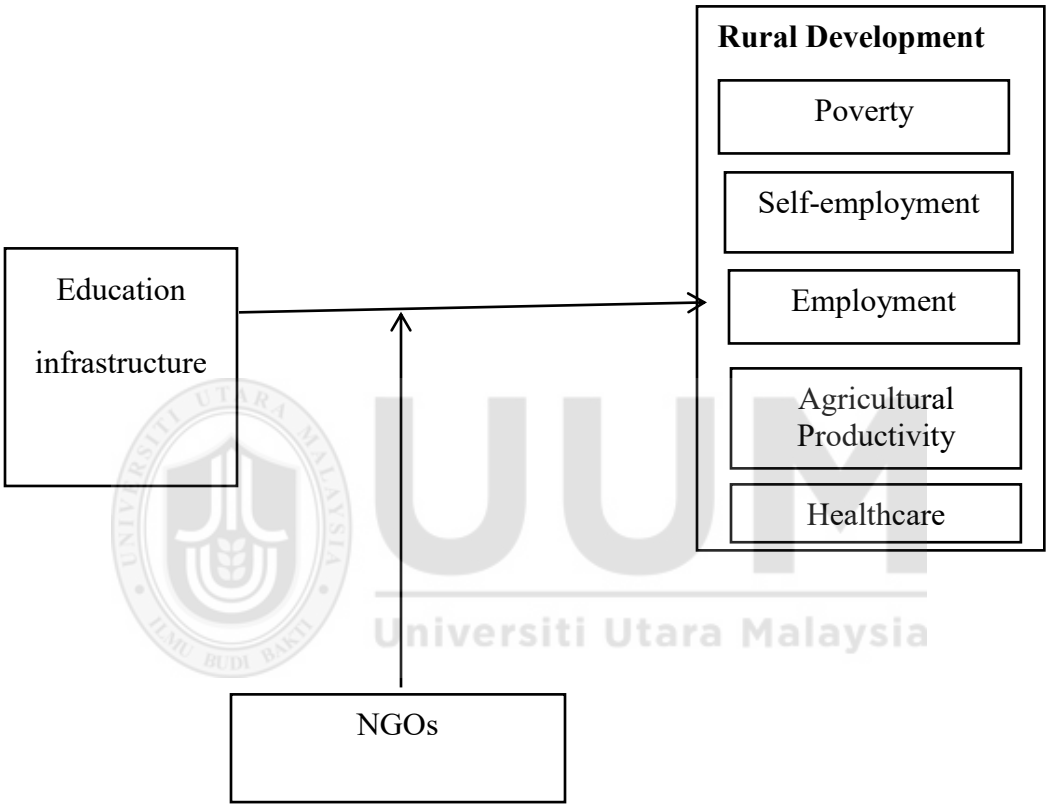

Figure 1.1 Research Framework

As depicted in figure 1.1, a research framework conceptualizes the relationships between variables in a study, and the relationship can be depicted diagrammatically, or graphically (Abok, 2013). Moreover, research frameworks present how the relationships in a model interact to give a sense of logical meaning as to the cause of the research problem for a possible solution (Bhatti, 2015).

The function of the research framework is to identify and elaborate on the important variables in a study that are of relevance to the problem defined. It helps in specifying and simplifying variable's relationships in a research, such as between the independent variables, dependent variables, moderating, and or intervening variables to address the question of why and how certain relationships exist (Bhatti, 2015). A variable could either be constitutive or operationalize. A constitutive variable is that which a concept is introduced to represent another concept, while operationalize variable is that which the researcher introduced to be used throughout the study.

A variable is a concept or trait that is not static, hence, it changes from time to time and from place to place. A variable can represent qualities, quantities or concept. Basically, there are three types of variables, firstly, a dependent variable which is a resultant variable, that is, one which is being investigated and whose variation is what the study tries to understand, as for this study, the dependent variable is rural development which has dimensions (poverty, employment, self-employment, agricultural productivity and healthcare).

Secondly, an independent, exogenous, or explanatory variable on the hand, is the factors that explain the variation in the dependent variable, an increase or decrease of the independent variables on the dependent variables result to commensurate increase or decrease in the variation of the dependent variable (Sekaran, 2013). As for this study, education infrastructure is the independent variable of the study. The assumption here was that, with adequate provision of education infrastructures in the rural areas, the lives of the rural people could be improved and by extension rural development.

Thirdly, intervening variable is a general term for both moderating and mediating variables and is used to strengthen the relationships between the independent variable and the dependent variable (Sekaran, 2013). As for this study, NGOs is used as the moderating variable of the study. The choice of NGOs to serve as a moderator for this study was based on literature review, where it has been established by some studies that NGOs plays a vital role in rural development effort, as such, NGOs is viewed as development partners (Vivian, 1994; Bright, 2015).

After extensive literature reviews, this study developed a framework of direct relationships between education infrastructure (IV) and rural development (poverty, employment, self-employment, agricultural productivity and healthcare) as the (DV), and indirect relationship between Non-Governmental Organization NGOs (MV) on the relationship between education infrastructure and rural development (poverty, employment, self-employment, agricultural productivity, and healthcare). In other words, the independent variable for this research is education infrastructure, while the dependent variable is rural development which has dimensions (poverty, employment, self-employment, agricultural productivity and healthcare). The moderating variable that moderate the relationship between the independent variable and the dependent variable is the NGOs.

In this present study, the formulation of the research framework and the selection of the variables were based on the assumption that education infrastructure has a high potency in predicting the development of the rural dwellers using the following indices poverty, employment, self-employment, agricultural productivity and healthcare as outcomes.

However, these sets of indices on rural development have not received the deserved attention in the literature on rural development. Also, the choice of NGOs as a moderator in the relationship between education infrastructure and rural development in this present study served as a major contribution to the literature on rural development, as most of the past studies have not considered its usage as a complementary variable in their various studies. Hence, this study has, for the first time, filled this gap in literature on rural development by incorporating NGOs as a moderator in assessing the effects of education infrastructure on rural development in Katsina state, Nigeria.

1.8 Significance of the Study

The significance of this study could be seen from various perspectives. Firstly, the study contributes to the existing body of knowledge by integrating the elements of rural development such as, poverty, unemployment, self-employment, agricultural productivity, and healthcare in one single study with education infrastructure as the independent variable (IV). However, previous studies have only independently, investigated the link between education and poverty, education and self-employment, education and healthcare (Asfaw &Admassie, 2004; Hussmanns, 2005; Ndjinga 2011; Berry, 2012; Bergh &Melame, 2012; Garidou et al, 2012).

Secondly, this study examines the specific linkage between education infrastructure and rural development with its attributes and dimensions (poverty, unemployment, self-employment, and healthcare). The dimensions were analyzed simultaneously with NGOs as a moderating variable. The introduction of NGOs as a moderator in this study, has therefore, expand the frontiers of knowledge, particularly in rural development literature

as it relates to the effect of education infrastructure on rural development in developing countries in general, and specifically in Nigeria.

1.8.1 Theoretical Significance

From the theoretical perspective, this research work had made a tremendous contribution to the literature on rural development by identifying the core elements of rural development, such as employment, poverty reduction, self-employment, healthcare, and agricultural productivity. However, this present study, reveals how education infrastructure can significantly induce rural development. This is because, education infrastructure has the potential of influencing rural development in particular, and national development in general. However, study of this kind has not been extensively researched in the existing empirical literature on rural development (Atchoargrena, 2003; Stefan, 2014; Muler et al, 2013; 2014; Zhang, 2015).

Furthermore, this study will be of significance in filling the existing gap by considering education infrastructure as a model for solving rural development problems. Secondly, the study will add to the existing literature by demonstrating the effect of NGOs on the relationship between education infrastructure and rural development. However, while previous studies on rural development have been largely conducted in the Western countries (Wigan, 2007; &Sert, 2012), this present study focus on a non-Western context, Africa, and specifically, Nigeria.

Finally, the study proposes an education infrastructure model for inducing and stimulating rural development, through the development of human capital. For the first time in extant literature, this current study will add to the existing body knowledge by incorporating

NGOs, as a moderating variable which strengthen the relationship between education infrastructure and rural development.

1.8.2 Practical Significance

This study had offered empirical evidence by establishing a link between education infrastructure and rural development, as well as assessing the moderating effect of NGOs on the relationship between education infrastructure and rural development in Katsina State. Thus, besides enriching theory and literature development, the findings from this study, could be utilized by public sector organizations, international development organizations, as well as international and local donor organization, as it provides an insight in to the mechanisms that induce rural development.

Additionally, findings from this research could be a source of new formula and guidelines for rural development, as well as for the development of human capital policies both at federal, State and Local levels. Governments, Development Agencies, and Donor Agencies can benefit from this study, as the study can serve as a policy framework for rural development programmes. Specifically, this study provides an important mechanism for synergizing the effort of the Government and that of the NGOs in bringing about rural development in Nigeria. It was revealed that, the best strategies for tackling the issues of poverty, employment, agricultural productivity and health care, through the provision of education infrastructure (Adedeji, 2011; Ige, 2013).

Finally, government stands to benefit immensely from this study in practical terms, by making use of its findings in policy recommendation, programme initiation, and

implementation, as it relates to rural development at three tiers of governments - Federal, State and at the Local levels, it could as well be useful at regional or international levels.

1.8.3 Methodological Significance

Methodologically, the choose of the method adopted in a study is contingent upon the type and nature of the research problem. This choice often posed as one of the most difficult tasks before a researcher. This is because, different types of research questions are best answered by different methods, and once a methodology is faulty, the whole work is also faulty, making the resultant outcome unreliable (Creswell, 2012; Sekaran, 2013). In this present study, SPSS package was chosen to serve as the tool for analysis based on the principles of parsimony which states that, a researcher should choose the simplest scientific model, because its more likely to be accurate than a complex model (Epstein,1984). Moreover, the model of this study, is a simple model which does not require advanced statistical tools for analysis, such as PLS, Stata and Amos. Also, the choose of SPSS in this study was informed by the fact that, the statistical package was known for its accuracy when performing hierarchical regression analysis (Bhatti, 2015; Babbie, 2013; Sekaran 2013).

Another reason for chosen SPSS package over other statistical packages was that, the output of SPSS is simple to read and understand by a lay man, as such, it is more suitable to use when dealing with a real-life situation (Bhatti, 2015). Another justification for the choose of SPSS was that, most studies on rural development were conducted using the qualitative approach (Yahaya, 2010; Ale, 2011; Ogunowo, 2012; Adesoji, 2013; Idara, 2014).

Hence, this present study tends to fill this gap by introducing a quantitative approach to the study of rural development literature. A quantitative research is more of scientific in nature, since the researcher has little tendency in influencing the result of the research. In addition, many of the past studies were conducted in the Western countries and were mostly qualitative in approach. Hence, this present study, attempts to fill the existing gap in the literature by carrying out similar studies in African context using a quantitative approach.

1.9 Outline of the Thesis

This thesis is structured into five chapters that follows a sequence. Chapter one houses the introduction, statement of the problem, research questions, objectives, significance, scope and limitation of the study, while chapter two contains the literature review and the theoretical framework of the study. Chapter three discusses on the methodology adopted for the study, while chapter four contains data presentation and its analysis. Chapter five concludes by discussing the results of the findings obtained from the analyzed data and it finally concludes by offering recommendations, and future research direction.

1.10 Definition of Terms

In order to make a research work easy to understand and to be focus, there was need to be precise as to terms and concept used by the study. Additionally, operational definition must be provided to which it will indicate how the study uses certain terms and concepts. This study has provided both conceptual and operational definition to the terms and concept used in this study such as rural, rural development, education infrastructure, and

NGOs. The above commonly used terms and concepts as used in this study will be briefly defined.

1.10.1 Conceptual definition of rural

Due to the changing nature of rural areas, the definition of rural area keeps on changing, particularly population threshold definition. From a population perspective, rural areas are defined in the USA as any settlement with less than 2500 inhabitant, while in Canada any settlement with 1000 inhabitant or less and has a population density below 400 per square kilometer is considered rural area (Hoggart, 2014; Novotný 2015; Ratcliffe, 2016). Similarly, Du Plessis (2002), and OECD (2014) define rural areas as community with 150 per square kilometer. From a general perspective, the term rural refers to an area or countryside as a geographic area outside the cities and towns which is characterized by low population density, an open space of land, scarce buildings, and means of livelihood is mainly agriculture (Chigbu, 2012; Foster and Sheffield, 2013; Jaja, 2014). The term rural, implies a remote settlement, where there is little or no presence of government services (Ehrlich, 2015). It refers to an undeveloped area characterized by high illiteracy level, poverty, and unemployment (Harande, 2009).

As for this study, rural areas are conceived from infrastructural and socio-economic perspective, thus, rural area refers to areas characterized by high level of illiteracy, poverty, unemployment, lack of necessary infrastructure such as good road, electricity, schools, safe water as well as good healthcare facilities.

1.10.2 Rural Development

According to Francis (2012), the concept of rural development differs from one perspective to another. According to him, the concept of rural development has undergone a gradual modification for the past decades due to alteration in development agenda. Similarly, from the perspective of socio-economic approach, rural development implies improvement of living condition of the rural people by increasing agricultural productivity, and other socio-economic activities in the rural areas (Tersoo, 2014). Similarly, Kabiru (2016) conceives rural development, as an approach aimed at changing and enhancing the entire aspect of the social and economic life of the rural people through the provision of social infrastructures such as schools and roads.

This study, therefore, conceptualized rural development as an effort aimed at tackling poverty and unemployment, as well as creating self-employment opportunities, enhancing agricultural productivity, and healthcare delivery for a better living condition of the rural dwellers thereby developing the rural area.

1. 10.3 Education Infrastructure

The term education infrastructure like many other concepts in the social sciences has no common definition. However, some scholars have used the term interchangeably with education facilities and school infrastructure. While commonly agreed definition of the concept was not tenable, attempt was made to conceptualize the term from some scholar's view point. Hence, education infrastructure refers to the school building, as well as the classroom, water point, electricity, furniture, library, laboratory and workshop, and playing ground (Modupe, 2012; UNESCO, 2001; Adebayo, 2013). Similarly, Tydecks

and Corrado (20016) uses the term education infrastructure to refer to, all the necessary resources which facilitate and support educational programmes so as to create a condusive learning environment.

Operationally, and within the context of this study, education infrastructure is conceived as basic education that include primary and secondary school education in rural settings of Katsina State Nigeria throughout the course of this study.

1.10.4 Non-governmental Organizations

The modern NGOs can be trace to the 1945 when the UN was created, and the term was first coined by the UN to mean any form of organization that is not under government control is perceived as NGO, provided it is not-for-profit organization. The UN further, define NGOs to denote any non-profit, voluntary citizen's group formed usually at local, national and international level that engages in humanitarian activities such as in educational, health care, public policy, social, human rights, and environmental protection. They are thus, a subgroup of all organizations founded by citizens, which include clubs and other association that provide economic and social services, benefits, and empowerment to the citizenry as part of their development effort (Lewis, 2010).

Hulme and Edward (1998) defined\s NGOs as intermediary organizations that engage in funding or offering other forms of support services to communities and other organization that seeks to promote development. Dang (2009) defines NGOs as private third-party entities formed to assist in achieving some social and economic objectives, which were hitherto, provided by the public sector or private sector entities. This study, therefore,

conceptualized NGOs as organizations that are neither part of the government nor private business, but engages in developmental efforts particularly in the rural areas.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The proceeding chapter had presented the background to the study, statement of the problem, the objectives, research framework, and the significance of the study as well as definition of terms. This chapter highlighted Nigerian education system, policy on education infrastructure, review of the literature on rural development and NGOs, as well as formulation of hypotheses based on the establishment of the relationship between education infrastructure and rural development (poverty, employment, agricultural productivity, healthcare and NGOs which is the moderating variable as well.

2.2 Nigerian education system

From a broader perspective, the Nigerian educational system is structure in to three segments, which are basic, post-basic, and tertiary (FRN, 2009). Early childhoodcare and development (or pre-primary education) is part of basic education but is specifically designed for children who are yet of school age. Nomadic education also falls within the category of basic education but is meant for Fulani people who are mostly wonderers. Adult education on the other hand, is a non-formal education which may be part of basic education or may go beyond it, as it can go as high as the post-basic level. Within the basic, post-basic and even tertiary education, there is technical/vocational education which

is a subset of the basic education, similarly, teacher education is also a sub-set of tertiary education.

2.2.1 Primary school

With the re-introduction of basic universal education (UBE), education was made free and compulsory from childcare up to junior secondary for Nigerian children. The basic education is divided into three stages, the first stage start with childcare and it begins at the age of three or four, it consist of three to two years before proceeding to primary school probably at the age of six which consist of six years of schooling programme, after completing the primary school, the pupil is expected to enroll into junior secondary school for a period of three years of nonstop , the last stage is the senior secondary school, which is also a three years schooling programme. The curriculum consists of subjects such as basic science, mathematics, science and technology, religious knowledge, Hausa, Yoruba and Igbo languages. The main objectives of basic education are to develop the literacy and numeracy ability of the pupils in order to make them functionally active in nation building (UNESCO, 2011).

2.2.2 Junior secondary school

This level of education is referred to as grade seven, eight or nine in some countries such as in USA, while in Nigeria, this level of education is referred to as junior secondary school and it has three continuous years of schooling immediately after completing the primary school education. According to Hamza (2011), both the pre-vocational and academic curriculum of these level of education were designed as a sort of introductory learning. At this level, the curriculum was designed in such a way to allow pupils to

acquire more knowledge and develop more skills. Subject taught at this level comprises of Mathematics, French, English, Social Studies, Integrated Sciences, Citizenship Education, and Introduction to Technology as the core courses, and pupil must choose one major Nigerian language as an elective.

2.2.3 Senior secondary school

The term secondary school refers to the level of education that facilitate advancement to the higher level of education which is tertiary education (Abdullah 2014). According to Reuben (2012), the aim and objective of secondary school education was to serve as a mechanism towards providing pupil that completed their primary school with the opportunity to advance their education to the highest level irrespective of ethnic and social background. The compulsory subjects that are taught are Mathematics and English and one major language among the three major languages in Nigeria. Other subject taught are Biology, Chemistry, Physics, Integrated science, English literature, History, Geography/Social Studies, Agricultural Science/Vocational subject. English language is used as the medium of communication for all the subject taught except the Nigerian languages. The advancement of students in terms of promotion from one class to another is determined through formative and summative evaluation which comprises of continuous assessment and end-of- term examinations. Under the formative evaluation continuous assessment is used to pass or fail a student, while for the summative evaluation, every year an examination is conducted for senior school student by the West African Examination Council or the National Examinations Council, successful candidate will be issue certificate and that will determine their enrolment into university for degree programme.

2.2.4 Tertiary education

Tertiary education comprises of university, polytechnics, colleges of education, and monotechnic (Education Act 2004). As for the university, the duration of studies ranges from four years to seven years, depending on the nature of the programme. Whereas for the polytechnics, colleges of education, and monotechnic the duration ranges from two to three years depending on the nature of the course. Academic session in Nigerian educational system consists of nine months which is divided into two semesters that has fifteen to eighteen weeks depending on the circumstances. The requirement for entry into most universities is a minimum of 5 SSCE/GCE Ordinary Level Credits as stipulated by the university regulation body (NUC, 2013).

At present, Nigeria has a total of 158 universities both public and private, the public universities comprise of 84 public universities which consist of 40 federal universities and 44 state universities, and the private universities numbered 78 as approved by the Federal Executive Council on the 9th of January 2019. There are a number of conventional universities which produce graduates in different fields such in the pure and applied sciences and in arts. Similarly, apart from the conventional universities, there are also specialized universities, that focus on few specific fields which produce graduates in their areas of specialization. Under the specialized universities there are universities of technology, universities of agriculture, and one military and police university. As mandated by the National Technical Board, the polytechnics are designed to produce middle-level technical manpower through diploma and higher diploma programme. The National Diploma (ND) is a two years programme which upon completion candidate is awarded a national diploma certificates, while the Higher National Diploma (HND), is

also a two years programme which upon completion candidate is awarded higher national diploma certificate (FRN, 2004).

From the recent statistics as provided by the National Board for Technical Education, the total number of polytechnics in Nigeria are 113 both public and private. The statistics also indicate that, there are 28 federal polytechnics, 41 state owned polytechnics and 44 private polytechnics (NBTE, 2018).

Presently, Nigeria has a total number of 83 colleges of education, 22 are owned by the federal government, 46 by the state government and 14 are owned by private individuals. The colleges of education were designed to produce middle manpower in teacher education through teacher's education programme that ranges from two to three years duration, which upon completion candidate is awarded national teachers' certificate (NCE) which is the minimum teaching qualification in Nigeria (FRN, 2004). In addition to the universities, polytechnics and colleges of education, there are other tertiary institutions such as monotechnic that offers a variety of higher education in different areas of specialization. There are currently 26 monotechnic in Nigeria, 22 are owned by the federal government, 2 by the state government and 2 by private individuals (NCCE, 2017).

2.3 Education policy in Nigeria

Policy on education in Nigeria started during the colonial era down to the present day. The first indigenous education policy that was formulated emanate from the 1969 conference which was held in Lagos. The papers presented at the conference were selected and compiled into a book form and was transformed as a new education policy for the country.

2.3.1 The 1961 Oldman Commission.

Oldman Commission was established to find out ways of reducing the disparity in terms of educational development between the southern and northern part of Nigeria. The commission's main task was to assess the financial and administrative constraint that were perceived as problem in establishing a universal primary education in the country. The commission was also mandated to create a workable mechanism where the local people can contribute to the funding of primary education as well as how control should be assigned to stakeholders.

After a wide ranging discussion, conclusion were reached which include: encouraging the participation of the LGEA, and the creation of local education committees that will be saddle with the responsibility of overseeing the smooth running of the primary education sector in the regions, and the commission was also given the responsibility of establishing a workable mechanism for the transfer of the existing non-public schools in each region to the local education authority of that region (FRN, 2004).

2.3.2 The 1969 Curriculum Conference.

The curriculum conference of 1969 was organized by the Educational Research Council of Nigeria as part of its effort in searching for the country an appropriate philosophy of education. Academicians, educationist, and the general public were invited for the conference and the conference was well attended. The need to fashion a new education policy for the country stem from the need to develop the education sector so as to achieve the desire national development. The conference focused was on meeting the need of the Nigeria youth and the society as the main substance of the conference. After presentation

of papers and discussion, a national education policy was formulated which has four cardinal principles as these:

- Inculcating good values in the minds of the Nigerian youth,
- Training the minds of the Nigerian youth so as to have a wider understanding of the world,
- Acquisition of appropriate skills
- Acquisition of relevant data.

After deliberation, the conference was able to identify social foundation as the aim of elementary education, and therefore urge that emphasis be given to moral education. As for the secondary schools' education, the conference recommends for making the curriculum more diverse through the encouragement of self-reliance and training the youth to think independently as part of the goal of the new education policy. As for the universities, the tasks of a university were to create a conducive atmosphere for research, teaching, constructive critique, as well as contribution to national policy, and community service. A teacher was identified as the key person in the scheme and women's education was encourage and equated with that of men. The general belief among the educationist was that, the present education systems had not achieved the desire goal it was designed to achieve because it failed to train students on how to become self-reliance and lead a good life (FRN, 2004).

2.3.3 The 1977 National Policy on Education.

The federal government of Nigeria in 1976 initiated another conference after the curriculum conference of 1969.The conference was headed by a one-time former

permanent representative of Nigeria at the UN, and Chairperson of the National Universities Commission with the mandate of synthesizing and reviewing the recommendations developed at the conference. The conference proposed for a change of educational system from the 7-5-3 to 6-3-3-4 system of education, and the proposal was adopted as the new system for Nigeria till date. The Nigerian educational blueprint was developed from this seminar which culminated into the present national policy on education of 2004. The document contained three sections, the first section stipulates the philosophy of Nigerian education system, the second section stated the aim and objective of pre-primary education, while the third dealt with issues pertaining to basic education in general (primary education, junior secondary and senior secondary education).

As contained in the new policy document, the education system was structured into three categories that eligible children were expected to enroll into. In the first category, every qualified pupils would attend a full six years of primary education, after successful completion of the primary school, pupil then proceed to junior secondary school for three years which upon completion pupil will then proceed to senior secondary education, after completing theses stages of education, successful candidate will then enroll into a university programme of either 4, 5 or six years study (6-3-3-4).

Higher education in the new policy document encompasses universities, polytechnics, colleges of education, federal advanced teacher training, and technical education was also categorized under the higher education in the policy. Emphasis was also placed on other special types of education such as educational services, administration, teacher education, planning and financing of education. Philosophically, the new policy marked a

philosophical shift to pragmatic American tradition away from the British idealist view of education and this is the philosophy of Nigerian education (FRN, 2004).

2.3.4 The 1976 Universal Primary Education (UPE).

The re-introduction of the modified free compulsory education in the year 1976 marked another landmark in the development and evolution of education in Nigeria. It was in this year that UPE was officially declared as the new policy on education for the country. As a result of the increase in the number of children of school age, and in order to encourage parent to send their children to school, the federal government formulated and implemented UPE which was designed to provide more access to education as the target of the policy. The unprecedented increase in enrolment into primary school was the prime factor for implementing UPE so as to accommodate the increasing number of children as statistics indicated that, the enrolment in 1975/1976 session was 6,200,000, and surged up to 14,800,000 in 1992 (Fafunwa, 2004).

As opined by Popawski (2009), UPE was adequate in scope and quality, the cardinal objective of the policy was to correct the previous education system's imbalances by making education more accessible to all children. The policy aimed to provide education to all citizenry regardless of their social and economic background. The policy was geared toward mitigating the hurdles caused by imbalanced development during colonial rule, and to reduce the disparity between rural and urban areas, as well as the inequality between male and female citizens.

2.3.5 The 1999 Universal Basic Education (UBE)

Universal Basic Education (UBE) is a modified version of UPE and was launched in 1999, and it's a move to achieve the objectives of Education for All (Jomtien Conference). After deliberation the document was passed into an ACT in 2004. As the UBE policy stated, states and local government were given the responsibility to manage basic education in terms of finance, it also expands the roles, and responsibilities of the federal government in managing basic education. The overall objective of UBE policy was to eliminate illiteracy, ignorance, and reduce poverty, as well as to stimulate and accelerate national development, political consciousness, and nationalism. The policy was fashioned to provide to all Nigerian of school age children with nine years of non-stop free and compulsory basic education (FRN,2004).

2.3.6 The 2009 National Education Policy

The Federal Government of Nigeria announced in 2009 the modification of the 6-3-3-4 structure of education to a 9-3-4 structure. The new structure provides for 9 years compulsory and free education for children from primary 6 grade to junior secondary 9 grade, and 3 years senior secondary grade 12, while four years for university education. Under this policy, tertiary education tuition fees are charged, but the federal government will continue to subsidize the fees so that poor family could afford to enroll their sons into tertiary institutions for higher education.

2.3.7 The 2013 modified Education Policy

Again, in September 2013, the federal ministry of education announced the introduction of a new education policy which provide a 1-year foundation for a 3-5 years child, primary

six grade to junior secondary 9 grade, and 3 years senior secondary grade 12, while four years for university education. (Akinnaso, 2012). This new policy is a modification of the previous 9-3-4 regime, the new regime now introduced foundation grade into the public education system.

2.4 Policy on education infrastructure

Katsina state education sector strategic plan (SESP) is a 10-year strategic plan that aim at addressing the education infrastructural challenges. The policy targets to realize its objectives in a 10-year perspective from 2010 to 2020 which addressed five major challenge areas, namely;

- Infrastructural insufficiency and infrastructural decay
- Lack of access to education
- Insufficient and poor quality of teachers
- Inadequate and non- sustainable funding of education

SESP is a detailed three-year strategic operational plan, (SESOP) which outlines the three-year implementation and direction for 2011, 2012 and 2013, with cost implication clearly defined. The state government is expected to enact a law which will give the plan a legal backing and further strengthen people's ownership of the plan. With the development of SESP and SESOP, the government of the state has a clear road map to achieving its educational development for the next decade. Both documents are expected to be integrated into the overall planning and budget activities of the state. It provides a valuable framework for policy dialogues with populace and as well as for negotiations with development partners.

Katsina state, like any other state, has adopted all the existing policies in the education sector of the federal government, and is steadily implementing them. These policies include the UBE Act, the national minimum qualification of teachers as NCE in Basic Education, while, the process of the adoption of Child Rights Act and the National Policy on Gender in Basic Education are on course. The state also utilizes the services and ideas of the National and International Development Agencies, such as MDGs, SEEDs, NEEDs, NGOs and other institutions. In addition, the State specific policies are periodically enacted according to need. In terms of provision of educational facilities and infrastructures, Katsina state currently has 2,188 primary schools with pupils' enrolment of 1,351,032 (825,120 males and 525,912 females), 172 Junior Secondary Schools and 160 Senior Secondary Schools) with an enrolment of 156,979 (100,967 males and 56,009 females) and 96,899 (73,706 males and 23,193 females), respectively. There are also 13 Special Science, Technical and Vocational Secondary Schools and 13 Tertiary institutions which include three Universities, two public and one private (MOE 2009).

2.4.1 Intervention strategy

To increase access and equity, Kastsina State Government embark on establishing and expansion programme of facilities in basic education and in senior secondary schools. To this end, Government will build additional required facilities in all the 34 LGAs of the State. Transport service is being provided for female students in urban and semi-urban areas. On funding, the major challenge is associated with delay in implementation of budget, poor budget performance and declining budgetary allocation to the education sector. Government will ensure that, the funding for the education section is increased, and the delay in releasing the budget is avoided. Over the years, the State budget to

education has been above the UNESCO obligations. For instance, 36.32 percent, 27.26 percent and 29 percent were allocated to education in the years 2007, 2008 and 2009 respectively. Government will also, collaborate with donor agencies such as UNFPA and UNDP to support the education sector in the State.

2.5 Constraints of Education Policy

In all countries in the world, policy on education are primarily initiated and implemented by governments, and this determine the direction of an educational system (Taiwo, 2013). Education policies serve as a guide on how to achieve educational objective of a nation because there is no country that can develop without proper education policy. According to Furlong (2013), educational policy is geared towards enhancing the condition of life of the citizen in order to have a healthy and productive population. No matter how good a policy is, it's not without constraints either in formulation stage or in the implementation stage, and some of the education policy's constraint are:

2.5.1 Policy implementation constraint

In most instances, the disparity that mostly exists between policy formulation and implementation call for a study to identify the factors that militate against effective implementation of educational policies in Nigeria. The genesis of policy implementation constrains can be attributed to lack of proper planning in the first stage. According to Asiyai (2013), three factors were responsible for unsuccessful implementation of programs which are: The first factor that hinders effective policy implementation is the communication process, achieving effective policy implementation requires that, the implementers know what they are expected to do. Secondly, the capability factor, for a policy to be well implemented, there must be those who has the ability to implement the

policy as required, the in-ability to implement policies may be due to incompetent staff, insufficient information, lack of political support, inadequate financial resources and time constraints. Thirdly, dispositional factor, in-ability to implement policy effective may be due to personality conflict on the part of the policy implementers. According to Asiyai (2012), for a policy to be effectively implemented the following factors must be considered, planning environment, social environment, political environment, and financial and statistical issues must be considered.

2.5.2 Policy inconsistency constraint

Policy somersault is one of the serious challenges that hinders effective education policy implementation in Nigeria, for instance the newly introduced 9-3-4 system of education came into being in 2009 only when the old 6-3-3-4 was dropped and now a new policy is introduced 1-6-3-3-4 just four years after implementing the previous one. Policy somersault has been identified as one of the factors that retard educational development in Nigeria which is partly attributed to lack of effective evaluation and monitoring by the bureaucrat who are supposed to compare the policy target with the actual performance. This poor performance by the bureaucracy result to policy abandonment or executed haphazardly and in some cases, they were not even executed and the fund for such programme will not be recover (Labo-Popoola, 2009).

2.5.3 Inadequate infrastructure constraint

Infrastructure is often regarded as the enabler that allows socio-economic activities to thrive, it is the underlying foundation or basic framework of a system (Salisu, 2016). Nigerian schools at all levels are faced with acute shortage of infrastructures. For example, as at 2010, Nigeria has 87,941 primary schools across the 36 state, with population of

24,422 of children of school age, also, there are about 7,129 government owned junior secondary schools respectively. In terms of school construction, 59,007 of primary schools were constructed in 2010 which accounting for 65.04 percent of total provision and recording a deficit of 11,295, while 36.6 percent construction was recorded at the junior secondary school, resulting to a deficit of 64 percent, which implies that for the country to move forward an additional 64 percent of schools need to be constructed (EFA,2014). Again, in 2011, the number of classrooms constructed was 72.25 percent of the required number, this figure indicated an improvement over what was recorded in 2010, even though there was an improvement, the figure indicated a deficit of 28 percent. As for the junior secondary school, in 2010, a total of 69,610 classroom were constructed accounting for 67.87 percent, and in 2011 the percentage was increased to 77.51 which also indicated a deficit of 23 percent. As stated in a report by EFA (2012), at both JSS and SSS classroom were inadequate resulting to a deficit of 252,312 classrooms for both JSS and SSS (NBS, 2016).

Other infrastructure that are very important in influencing effective learning are utilities such as, water, and electricity, both of which make the school environment child-friendly (Aluede, 2012). As stated by SER (2013), across schools in Nigeria, provision of water was inadequate, for instance, out of the 36 states only 21 states provide above 60 percent of water supply in their schools. Similarly, provision of teachers stood at 426,132 both in private and public primary which accounts for 45 percent, this shows that there is a deficit of 55 percent of teacher's supply in Nigeria's public and private schools. Also, provision of teachers at the JSS stood at 170,628 teachers in the country accounting for 43 percent,

and the ratio of student to teachers is 1:126 in all public and private which implies there is acute short of teachers in Nigeria (NBS 2016; Taiwo, 2013).

Although, over the years there was an increase in the number of higher institutions of learning, but the increase is not adequate enough to accommodate the teeming number of qualified candidates seeking admission into institutions of higher learning particularly universities, as the capacity of the institutions could not even accommodate half of the candidates seeking admission. For example, in 2016, 1.5 million candidates sat for the entry examination into universities and other higher institution (JABM), whereas the total capacity of all the institutions in the country is only 400,000 which means an additional 492 institutions are needed to accommodate the 1.1 million candidates that could not get admission due to short of infrastructure (FME,2016). Inadequate infrastructure in most schools in Nigeria posed a great challenge. This is evident as most institutions must deal with the problem of obsolete equipment in the laboratories, and classes are overcrowded. In most of the schools in Nigeria, the workshop, and the laboratories were obsolete and in-adequate, also, the furniture were also not adequate, and in some cases, some were broken. Bed space capacity of all the universities in Nigeria put together stood at 109,509 spaces, accounting for 10 percent of what is required which means 90 percent of students seek for accommodation elsewhere. In most of the universities, the average ratio of toilet users was 1:20 which compel some students to use bush and the surrounding compound for excretion (FME, 2016).

2.5.4 Corruption constraint

Corruption at all levels, has been one of the factors that contributed immensely to the deteriorating situation of Nigerian education system. For example, according to former president of Nigeria, N55 million was said to have been collected from the former minister of education in order to facilitate the approval and enhancement of the ministry budget, and refusal to give the bribe will meant doom for the education sector. Similarly, much of the fund for the running of the education system including primary and secondary schools as well as tertiary institutions were mis-appropriate by the officials for personal purposes (Aluede, 2012).

2.5.5 Funding constraint

The return to democratic dispensation in 1999 has not help in improving the education sector, rather the situation has further deteriorated as the budget during these years of civilian rule were short of UNESCO bench mark of 26 percent of the national budget. The allocation for the education sector was much better during the era of military rule, as the education sector received not less than 13 percent throughout the military era. However, civilian dispensation has fallen short of this 13 percent. For instance, the allocation to the education was 8 percent in 2001, and in 2004, the allocation to education was 5.6 percent in 2010 , 7.19 percent, in 2011, 9.32 percent, in 2012, 9.86, in 2013, 10.15 percent, in 2014, 10.54 percent, in 2015 10.78, in 2016 7.92, in 2017, 7.4 percent, in 2018, 7 percent (Adedigba, 2018).

2.6 Rural Development

The past decades have witnessed the evolvement of the concept of rural development from mere agricultural development to a broader meaning, which goes beyond agricultural

development. World Bank (2012) conceives rural development as a scheme, which is planned to enhance the economic and social condition of the rural people in such a way that the benefit goes around the targeted rural community. The concept of rural development is synonymous with agricultural improvement, which placed more emphasis on increased agricultural productivity, resulting from industrialized nation's quest for raw materials needed for their industries (Chambers,2014). However, the central idea of rural development derived from the above definitions was that, it revolves around improving agricultural productivity, which in turns, enhances the quality of lives of the rural people.

Eneh (2011) defines rural development as a method that put together some concrete efforts in enhancing the rural productivity through the diversification of the rural means of income and generation of employment opportunity with the aim of attracting the rural people to continue their staying in the rural areas. From this view point, rural development is perceived as an amalgamated approach of improving production of food, and provision of socio-economic infrastructure, which could result in good healthcare services, improved education and agriculture output. According to Tersoo (2014), rural development can be distinguished from agricultural development, even though they seemed synonymous. This is because, agricultural development implies developing agricultural sector, which in turns develop the rural areas, whereas rural development on the other hand, entails series of efforts geared towards improving the living standard of the rural dwellers, be it through agriculture or through any other mechanism. From these definitions, it is evidently clear that scholars, such as Eneh (2011) and Adepoju, (2013) viewed rural development from this traditional perspective, which is synonymous with agricultural.

According to Francis (2012), the concept of rural development differs from one perspective to another. According to him, the concept of rural development has undergone a gradual modification for the past decades to the present time, due to alteration in development agenda. Similarly, from the perspective of socio-economic approach, rural development implies improvement of living condition of the rural people by increasing agricultural productivity, and other socio-economic activities in the rural areas (Tersoo, 2014).

However, viewing rural development from a broader perspective, one can deduce that, rural areas in most countries of the world, especially those in the developing countries, lacks infrastructural facilities, such as good road, school, and hospitals, which are a basic condition for development and for a healthy living. Along this line of reasoning, Anaeto (2008) asserts that rural development is a part and parcel of national development, because national development cannot be meaningful if the rural areas are underdeveloped. As highlighted by Olawepo (2012), no nation can lay claim to being developed when its rural areas lack basic infrastructural facilities necessary for good life. The central feature underlying this concept of rural development is that, it is a planned strategy, which is aimed at uplifting the miserable lives of rural people through the improvement of the social and economic aspect of their lives (Arong, 2010; Monisola, 2012).

Contextually, this study conceptualized rural development as comprising of a deliberate plan which is focused on enhancing the socio-economic aspects of rural dwellers, especially the educational, agricultural, healthcare and employment aspects.

2.6.1 Previous studies on rural development

Rural development is a global phenomenon to which both developed, and the developing countries are making tireless efforts at seeing that the rural areas are developed to such an extent that the living condition of the rural dwellers is improved. However, the strategies adapted in achieving rural development vary from developed and developing countries. While the developed countries are advanced in terms of infrastructural development and human capital development, the developing countries on the other hand, are lagging. These discrepancies account for the variation in focus between the two economies, whereas, the focus of developing countries was on how to reduce the poverty level, generate employment, combat illiteracy, reduce the mortality rate, as well as improving infrastructure, that of the developed countries were on development of tourism as a mechanism for rural development focusing on enhancing income of the rural dwellers.

Some studies in extent literature has viewed rural development from policy and models' perspectives. For instance, Petrick (2013) looked at neo-endogenous rural development from the view point of evolutionary leadership. The objective of the study was to examine neo-endogenous rural development policy from evolutionary background. The study adopted a conceptual approach of data collection, through the secondary source. The study argues that a leader's personality plays a significant role in shaping rural development policy in a given locality and institutions, such as public policy on infrastructure. The study further argues that, not all areas developed at the same pace even if they have the same number of amenities, one region may over take another due to leadership variation. Although, this study examined the implication of top-down approach to rural development in the amazon forest, however being a conceptual study is one of the weakness of this

study, as conceptual study tends to lack strong ground in proving relationship among variables. Another weakness of this conceptual approach was its lack of ability to make a generalization due to lack of precise sample.

In a similar study, also from policy perspective, Pokorny (2013), examined the reorientation of rural development policies as it affects climate change, poverty and food security. The study adopted conceptual approach and the method of data collection was through the secondary resource, and the data analysis was analytical. The study argues that, for any meaningful development of the amazon region to be realize, the culture of the local people, local knowledge and participation of stake holders in decision making pertaining to the development of their area has to be ensured. The study further, argues that past policies on rural development in the area were mainly oriented toward large scale investment, global market, and qualified entrepreneurship which does not tally with the reality in the rural areas as what the rural people need is small scale capital. Although, this study has made a good attempt in examining the implication of top-down approach to rural development in the amazon forest, however, one of the weaknesses of this study was that, it's methodological approch tends to lack strong ground in proving relationship among variables. Another weakness of this study was that, conceptual approach lacks the strength in making generalization due to lack of precise sample.

In the same vein, Das (2015) examines the role of CSR as a mechanism for rural development in India. The study adopted conceptual approach and the method of data collection was through the secondary sources. The study argued that CSR should be an important issue that every company must takes seriously regardless of its size. Further,

the study concludes that CSR had impacted positively on the lives of their business partners and all aspects of human endeavor. The study further, recommends that, government should formulate policy that will ensure compliance with CSR regulation by companies for a speedy actualization of their rural development drive. Although, this study examines the role CSR plays in rural development as it relates to policy, which is a good attepmts, however, being a conceptual study, it lacks the strength for making generalization.

Similarly, from land consolidation policy view point, Varga (2013) examines land consolidation as a means of rural development in Vozokany. The objective of the study was to examine the effectiveness of land as a tool for rural development. The study adopted a case study approach and the data was collected through the secondary source. Finding from the study shows that irrigation, water, and construction of road were critical to rural development. Furthermore, the study reveals that soil improvement, land levelling, and transforming dry land into a forest can impact positively on rural development effort. The study suggests that, effort should be made to ensure erosion control, and enhance water management, as a way of land consolidation. This study has contributed to literature on rural development from land consolidation perspective, however the area chosen for the as a case study was not adequate to allow for generalization.

In a similar study, Adisa (2012) investigate the issue of land conflict between farmers and herdsmen and the implication on agricultural and rural development in Nigeria. The study adopted quantitative survey approach and data was collected from primary source through the instrument of questionnaires. The study has a total of 30 respondents which were

selected using multi-stage sampling techniques involving 6 local government areas of Kwara State. The obtained data was analyzed by the means of statistical tool. The study reveals that, the multifunctional uses of land and its limitedness, and the increased in the rate of human and animal population were among the factors responsible for conflict between herdsmen and farmers. The study further, reveals that, income lost because of conflict between herdsmen and farmers within the study area accounted for 91 percent for both sides, while losses in respect of status and respect accounted for 30 percent for the herdsmen, while for the farmers, it accounted for just about 13 percent. The study further reveals that, conflict between farmers and herdsmen remain pervasive, and it tends to pose a threat to rural development effort.

Relatedly, but from a different perspective, Ramirez-Miranda (2014) examine the new rural territorial approaches in America. The study adopted a conceptual approach, and the method of data collection was through secondary source. The study argues that, globalization of agricultural businesses, and migration were some of the issues that posed challenges to the most American rural areas. The study suggests that, neo-liberation approach to rural development should be change to an indigenous approach that will strengthen the rural peasants through agricultural development, food sufficiency, equity and democracy. This study also examines the new approaches to territorial rural development, which was a good attempt, but being a conceptual approach, the study lacks basis for generalization, which was the shortcoming of this study.

Looking from the Gender angle, Oino (2014) examines the role of women group in rural development in Kenya. The study uses an empirical approach by drawing its sample from

10 registered and 15 unregistered women groups in Nyamira Division. Findings from the study reveals that, women in most rural settings were less educated, and have less access to asset, and were less privilege to be involve in decision making. They also lack support from the stakeholders and government, and this has led to their incapacitation in addressing rural problems. Other Findings from the study also reveals that, women group has the potential of uplifting their problem in the rural community in which they live if they are given the required support. The study finally recommends that, rural community base group should be encouraged and promoted to make their contributions to rural development thrive. This study has added to the literature on rural development from the perspective of women group. However, the sample used for the study was not adequate for generalization.

Similarly, Rad (2012) examines the effects of women participation in sustainable rural development in Turkey. The purpose of the study was to study women participation in sustainable development in relation to demographical and socio-economic determinants. The study adopted both quantitative and qualitative approach to research and uses a multi correspondence analysis as a way of analyzing its data. The outcome of this analysis shows that, youth were more educated in the area under study, while majority of the women prepares their daughters for a better education and lucrative jobs. The study further found that, education was the most determining factor for women involvement in decision making and the regularity as well. In addition, the study found that, the monthly income of a household determines the number of children they should have. This study has therefore, made an immense contribution to literature on rural development in relation to education. One of the limitations of this study was that, the number of samples for the

study was not mention and the method of the research was not also mention. However, future research should mention the method adopted and the exact number of the sample size used in the study.

In the same vein, Desai and Joshi (2013) explore the collective action and community development in relation to women's self-help groups in rural India. The study selected randomly 32 out of 80 villages to establish SHGs for women from one of the poorest districts in rural India. The study reports that after two years of implementation of the intervention programme, women in the SHGs programmes exhibited greater improvement in making household decisions, and they as well show cooperation in the engagement in the civic women participation than women in the control group in the villages. The study further, investigates the sources of cooperation by conducting a simple multi round public goods game in 14 poor rural villages. The findings revealed that, women that were exposed to SHGs has a faster cooperative attitudes and inclination than women that were not exposed to SHGs programme. The study also found that, women in the SHGs recognized the consequences of non-cooperation amongst the groups than the women in the control groups. Based on the above findings, the study submitted that, SHGs and other organizations memberships strengthens collective actions which enforces commonality and reduces the uncertainty of non-cooperation among the rural-poor women in India.

Tourism has been a strategy for rural development for some Western and Asian countries, for example, Jaafar (2015) examines the effect of tourism development on local community in Malaysia. The study employed quantitative methodological approach, with a sample drawn from Kinabalu national park. 378 respondents were selected to serve as

the sample for the study. The objective of the study was to explore the involvement of local community in tourism development and the benefits derived from such tourism activities. The result from this finding showed that, the respondents have a positive perception of tourism development, and it also reveals that tourism activities has significantly enhanced their quality of live of the rural people through increased income from the tourism activities. This study has contributed to rural development literature from the tourism perspective, however like the other previous studies above, the sample of the study was not enough to make a generalization outside the scope of the study.

In the same vein, Gonzalez (2013) examines the role of heritage site in fostering rural development in Spain. The study adopted a case method and the data was obtained from the primary source. The study argues that, heritage should be considered as an alternative tool for sustainable rural development, and institution as well as local communities needs to enhance the preservation of these heritage through the formulation of a workable framework that will facilitates quick decision-making processes in relation to rural development. This study has made a contribution in rural development literature from the perspective of rural heritage, however the study needs to have more than one village as a sample or case study for the purpose of generalization.

Similarly, Piket (2013) examines the cycle tourism as a viable mechanism for rural development in EU. The study focused on the role of cycle tourism in rural development in EU countries. Findings from the study indicates that, cycle tourism like other mainstream tourism, spend equal amount of money on daily basis, which has contributed significantly to the rural economy. This, by extension, has stimulate rural development

because cycle tourism has proven to be a viable mechanism for rural regional development. The study further reveals that, cycle tourism has a lower negative impact on the environment in terms of pollution than other kinds of tourism. This study has taken a different dimension from other studies in relation to rural development, but more studies needs to be conducted to prove the efficacy of cycle tourism in rural and regional development.

In line with the above study, Saarinen (2014) examines the integration of tourism with planning in the developing world in relation to rural development. The data for the study were obtained through the secondary source. The study, however, contends that for the past decades rural areas have experienced socio-economic changes as a result of globalization and modernization, which resulted into a decline in employment or a nose-diving of economic activities. The study argues that tourism is a viable tool for addressing rural underdevelopment in low income countries of the world as this can be used as means of diversification of economic base of the rural people thereby creating jobs and enhancing their level of income. The study suggests that integration of tourism with rural development planning could be an effective mechanism in solving the problem of rural underdevelopment in low income countries. From the perspective of rural development, this research work, had significantly added knowledge to the literature pertaining to rural development, even though the study is a conceptual in approach, it really adds to rural development literature.

In a similar study, Dimitrovski (2012) examines the rural tourism in relation to rural development in Gruta Serbia. The study focused on the role of residents' support for rural

tourism and their perception of its impact on their lives. The study adopted survey approach, and the sample size of the study were drawn from 20 tourism organization, 13 from rural host, and 30 from the tourists. The result from the respondent profile indicates that 92.3 percent of those who owns home in the village who were involved in tourism were male and 7.7 percent were female, while dominant age were between 40 to 60 years old, the level of education among the rural people was 69.24 percent mostly secondary school education. The study found that, for domestic tourism, the number of tourists recorded ranges from 35 to 400 people per year, while for the foreign tourists the number ranges between 20 to 100 as determine by the season. Although, this study seems to have made a significant contribution to the literature on rural development in relation to tourism, however its sampling size is inadequate for generalization.

Similarly, Haven-Tang (2012), through the use of single case study approach, examines the role of local leadership in tourism development in Adventa, Monmouthshire, UK. Result from the analysis found that, 73 percent of the beneficiaries have the contention that Monmouthshire unprecedented success in marketing was due to involvement of Adventa which has led the development of Monmouthshire as a unique destination identity. The study further, indicate that, tourism had significantly enhanced the quality of life of the rural Wales as it facilitate the provision of tourist facilities which in turn facilitate income generation as well as community cohesion, and diversification of farming profession. The study suggests that, there is the need to help promote rural tourism businesses in Monmouthshire in order to contribute to the overall development of rural. The study has therefore, made an important contribution pertaining to the literature on

rural development in relation to tourism. However, a single case study lack strength for generalization outside the scope of the study and this is the limitations of this study.

In a similar study, Stylidis (2014) examines the role of resident support for rural tourism and their perception on the impact on their lives. The sample of the study which is 300 was selected using multistage techniques and the study adopted survey approach. The study revealed that if what the residents perceived as benefit is more likeyl to outweight the perceived negative impacts, then residents will support tourism development. findings of the study have shown a positive and significant relationships among three domains, which were perceived as impacts as well as residents' support. The study had undoubtedly contributed to the literature on rural development in relation to tourism, however, the sampling size of the study was not adequate for generalization.

Commonly, Hwang (2012) examines the relationship between community behavior and sustainable rural tourism development in South Korea. The study adopted qualitative approach and the data for the study was obtained from interview conducted in Jeju Island. Result from the interview shows that, the economic gains from tourism in the Island was about US$1 billion, accounting for 13 percent of the GDP. The study has contributed to the body of literature on rural development in relation to tourism, however, the sampling size of the study was not mentioned to know whether it's adequate for generalization.

In the same vein, Obonyo (2014) examines the integration of tourism with rural development in Western Kenya. The study adopted quantitative approach and the data was collected through focus group discussion which involved 27 respondents, nine (9) individuals from hospitality and tourism enterprises, nine (9) individuals from

community-based organizations (CBOs), and nine (9) respondents from NGOs. The study reveals that, poverty was a major challenge that militate against realization of rural development in Western Kenya which was due to high rate of unemployment, making the rural inhabitant unable to improve their condition of living. The study further found that, the rural areas are important element of modern tourism, and rural tourism could serve as a vehicle for revitalizing rural communities. The study recommends that, since community-based tourism is capable of producing economic benefits through conservation of natural and cultural resources, and openly and directly assists both local communities and nations in achieving sustainable environmental development, there was the need for managers to foster the spirit of community attachment among host residents to realize the desire rural tourism development. Despite its contributions, the study has some shortcomings among which were its narrow focus which was on one area only.

Similarly, Hernández-Maestro (2014) examines the role of lodging as a driver for rural development. The study found that, there was significant effect of access to supportive activities on rural lodging, occupancy and sales, whereas on the price level and profit there was no significant effect, as well as the cost for incurring the amenities overweight the extra income achieved, also the rooms does not have the capacity of influencing the outcome of the four items. Despite its contributions, the study has some shortcomings among which were its narrow focus which was only on one rural area and the sample that was used for the study was not adequate for generalization.

Rural development could also be view from ICT perspectives, for example, Chitla (2012) examines the impact of information and communication technology on rural India. The

study centered on potential role of ICT intervention in rural transformation initiatives in rural India. The study also examines how ICT is used in eradicating poverty and the performance of e-governance. Also, highlighted was the potentials of the current ICT initiatives for infrastructural development and the extension of information and communication services from the center to the periphery. Since early 90s, ICT has been playing a leading role in the development process. In the globalization era, India used ICTs to drive their development programs and reaching the poor to strengthen their livelihood. This study has contributed to rural development literature, however, the study lack sufficient sample to make genelization which is the shortcoming of this study. Other shortcomings of this study were, the inability of the study to mention the type of approach adopted.

Similarly, Townsend (2013) examine the role of broadband in socio-economic development of the rural area. The objective of the study was examined the role of broadband in disseminating information to rural people. The study adopted a conceptual approach and the data was collected through the secondary and analytical method of data analysis was utilized. The study argues that, broadband accessibility is imperative for dissemination of information to the rural people in areas pertaining to education, agriculture, and healthcare related issues. The study suggests that facilities such as electricity and computers should be provided in order to dis-isolate the rural communities. This study like other ones looked at rural development from ICT perspective, however, the study being a conceptual one lack the ability for generalization.

In a related study, Salemink (2015) review literature on unequal ICT availability and adoption in relation to rural development. The objective of the study was to synthesize the findings of 157 papers on digital and rural development focusing on the main conclusion in advance countries of the world. The study found that, two major main themes of research connectivity and inclusion , in the connectivity research it was found that, there were growing variation in data infrastructure and quality when compare between urban and rural centers, while under the inclusion theme, it was found that there was problem of diffusion or transfer of technology, and lack of skills and low level of education as was evident in the rural areas which have a negative impact on the use and adoption of ICT. The study suggests that, public policy should be fashion in such a way that it takes into cognizance the issue of outdated infrastructure, and availability of ICT facilities in order to improve rural accessibility and more responsive to the local need. Future study should also focus more on the connectivity, and inclusion in addition to obsolete infrastructure. This study has contributed to rural development literature from ICT point of view.

Similarly, Boating (2012) examine the role of ICT in rural development in Ghana. The objective of the study was to examine the role play by ICT in Ghana's rural development drive. The study adopted a theoretical approach, and the method of data analysis was analitical. The study contends that, ICT potentials in rural development covers education, healthcare, agriculture, and SME. The study further contends that, ICT has played a vital role around socio-economic development of the rural people through economic empowerment in terms of job creation and increase in income. The study also argues that, ICT has made an immense contribution in areas such as in communication, rural banking, networking, information dissemination, and distance learning. The study suggests that, to

enhance the role the of ICT in rural development, there should be regular supply of electricity and provision of ICT facilities. This study has made contribution to rural development from ICT perspective, however, the study would have used some selected area to serve as a case study or sample.

In the same vein, Tripathi (2012) examine ICT as an instrument for rural development in India. The study adopted a conceptual approach, and the data for the study was sourced from secondary source and the data was analyze by citation and analytical method. The study contends that, ICT can play a vital role in ensuring effective management of natural resources such as cool and land, through effective channel of communication in terms of environmental awareness campaign. The study further contends that, ICT banking system in the rural areas can be used to facilitate micro-finance services such as loan credit and saving scheme for the rural dwellers, in terms of social capital, ICT can play a vital in improving networking within community and among communities as well as among regions and nations. The study also argues that, ICT is an essential tool for improving marketing through dissemination of information pertaining to market prices and product. This study has contributed to literature pertaining rural development from ICT perspective, however, the study being a conceptual approach, lack the capacity for generalization.

Traditionally, rural development was viewed from agricultural perspective, for example, Ibrahim (2012) explore the elements which determines farmer's accessibility of credit in Nigeria's rural areas. The data used for the study was drawn from the rural areas of Katsina State. Probit modelling was employed as the method of data analysis for the study.

Findings revealed the existence of positive and significant effect of farmer's access to credit on educational level, collateral, income, and marital status, while gender and age indicate no significant and positive effect on the farmer's accessibility to credit. Furthermore, transaction cost and interest rate does have significant negative influence on the farmers access to formal credit. The study, however, argues that from the way the banks are structured in Nigeria, it is extremely difficult to access credit from conventional banks and therefore, recommended a different approach to lending arrangement such as group and character lending methods which will enable farmers in the rural communities to have access to formal credit. One of the limitations of the study was that, the study does not indicate any quantitative data to justify the appropriateness of the sample from the population it represents or its suitability for generalization.

In the same vein, Oyakhilomen (2014) conducted a study with the aim of examining the relationship between agricultural production and the growth of Nigerian economy with a view to address the menace of poverty. Time Series was adopted as the approach for the study and unit root tests and the (ARDL) testing approach were utilized as the method of analysis for the study. Findings revealed that, agricultural production has significantly influenced the favorable trend of economic growth in Nigeria. The study further found that, in spite of the economic growth, poverty is still on the increase, which suggests an inverse relationship. The study therefore, recommend for a paradigm shift from the monolithic oil-based economy to a more plural one with agriculture leading the sector, the study also suggest for a pro-poor policy that should be designed to alleviate rural poverty through increased investments in agriculture and collaboration with public and private sector. The study is a good attempt in looking at the issue of agricultural production and

economic growth in Nigeria and its implication for rural poverty alleviation in Nigeria. However, the study does not indicate any quantitative data to justify the appropriateness of the sample from the population it represents or its suitability for generalization.

Commonly, Kasimis (2013) examines the transformation of rural areas and family farming in present day Greece. The objective of the study was to examine how rural areas in Greece were transformed into semi-urban areas through the process of de-agriculturalization and rural restructuring process. The study argues that, the de-agriculturalization and rural restructuring process had helped in transforming the rural areas into a new rurality characterized by agricultural contradiction and construction, enhance tourism, and increase employment, and the restructuring of family labor. The study further argues that on the environment aspect, the new rurality has been affected by falling incomes, and shrinking of public services. The study had added to the literature in rural development from the perspective of new rurality, however this study was a conceptual in approach and as such does not have the strength for generalization.

Simultaneously, Kose (2012) examines Turkey agricultural policy reforms and their implication for rural development. The objective of this study was to examine Turkey new agricultural policy and their implication on rural development in relation to poverty and employment as compare with EU. The study argues that, despite the achievement made by Turkey in rural development policy, the agricultural policy has been criticize for been decouple because of lack of direct support to couple, while the EU policy is mainly decouple support which was use as tool to support farming. The study further contends that, rural and agricultural policy problems were not peculiar to Turkey alone, most

countries in the EU faced the same problems. This study has contributed to rural development literature, however, the study was not without limitation one of which was the lack of precise sample that could allow generalization.

In the same vein, Hildén (2012) examines the concept of sustainable agriculture in relation to rural development in Finland. The study adopted a conceptual approach and the data was collected from secondary source, and the method of the data analysis was analytical. The study contends that, within the EU common agricultural policy, Finland agri-environment policy was implements and monitor in relation to sustainability in agriculture, whereas the rural development indicator shows no sustainability, the study further argues that as a result of the non-sustainability there was a shift in policy paradigm from sustainable agriculture to sustainable rural development.

Commonly, Mölders (2014) examine the multifunctionality of agricultural policy in relation to rural development sustainability. The study adopted conceptual approach and the data for the study was collected through secondary means. The study argues that, two perspectives of multifunctionality were generated which are adaptation and transformation, adaptation contends that the economic strategy that created problems in the rural areas were reproduced rather than reflected upon, while the transformation argues that multifunctional agricultural policy result to a change of expected and unexpected transformation of the rural sustainability through economic reproductive process which has been developed and established. This research work had added to literature in rural development from a multifunctionality perspective, however, the study lacks the strength to be used as a basis for generalization because of the conceptual nature of the approach.

Similarly, Amekawa (2011) examines the agroecology and sustainable livelihood as an integrated model of rural development. The purpose of this study was to make a synthesis of agroecology and sustainable livelihood approaches to rural development. The study adopted a conceptual synthesis as the approach of the study and at the end of the synthesis a new approach to rural development will be propose. The study argues that, both agroecology and sustainable livelihood approach to rural development are multidisciplinary school of thought in development studies that investigates the contextual struggle of the rural poor at various condition. The study further contends that, agroecology and sustainable livelihood approach to rural development have made a tremendous contribution in the development of rural development model by promoting people center approach of rural development. The study further reveals that, the synthesis of the study was able to come up with a modified model of rural development which incorporate some ideas of the two approaches into a modified approach. The study suggests that, future studies should open up discussion on the integration of agroecology and sustainable rural development approaches with a view of arriving at a modified model. This study has contributed to the literature on rural development from a new perspective which was an attempt to come up with a model of rural development. However, the major shortcoming of agroecology was that, its focus was restrictive to agriculture whereas recent studies shows that off farm employment contributed more to household income than agriculture.

In a related study, Senadza (2011) determine whether the non-farm income improve or worsen the inequality in income distribution in rural Ghana. The study used the nationally household representative survey data of 2006 through Gini-decomposition technique. The

finding disclosed that, non-farm income worsened the income disparity among the rural families in Ghana. Additionally, the non-farm self-employment income decreased the inequitable income distribution, while the non-farm wage income adversely increases the disparity in income distribution. Moreover, a factor-decomposition exposed that education is an important determinant that substantially contributed to the high improvement in the non-farm income distribution of the household families. Thus, the policy thrust is to reduce the education inequality among the rural family in Ghana. This could be done by improving access to non-farm employment as this could curb the existing wide disparity income distribution of the households, as well as to break the chain of family cyclical poverty. The study succinctly indicates that, improvement in access to education will increase the non-farm wage of household livelihood of the rural community in Ghana.

In a related study, Aseyehegu, Yirga, and Rajan (2012) assesses the factors that constraints smallholder farmers' involvement in small-scale irrigation in Tigray region of Ethiopia. A two-stage sampling design was employed in the selection of peasant farmers associations as the sample participants. The binary probit estimation and descriptive statistics were used to estimate the factors that influence participation in small-scale irrigation activities. The findings from the study disclosed that, gender, income, household's health condition, availability of market information were found as factors that determines farmers participation in small scale irrigation activities. Thus, the study suggest that, improving the farmers accessibility to market information, and providing health facilities will result in the improvement of the participation of rural people in irrigation schemes which will subsequently improve small scale farmers income.

Equally, Todo, and Takahashi (2013) evaluates the effects of farmer fields income on agriculture in rural Ethiopia. The study found that, the income of participants in the farmer fields school programme increased by about 60-160 US dollars, which was more than the average earn income per employee prior to the project. The study also reveals that, increase in employee's income was due to the application of new agricultural practices such as the used of new improved techniques of farming taught and promoted in the farmer field school programme. The improvement in income was due to education which the farmers were thaught during the project. Therefore, education is an important factor that can be emphasize in Ethiopia and the world-over to curb the menace of poverty in the family household's income.

In the same vein, Aseyehegu (2012) assessed the effect of irrigation on the income of the rural farm household in Ethiopia. The study adopted survey method selecting Laelay Maichew district as the study area. Multi-stage sampling techniques was used in drawing the sample for the study, peasant association and the household farmers were selected as sample for the study, and for data analysis, descriptive statistics was used. The outcome of the analysis shows that, information pertaining to market, health condition, income and gender were some of the factors that determine the household participation in irrigation scheme. The study suggests that, in order to encourage household farm participation, access to market information, health services, and gender awareness should be improved as these are most likely to improve irrigation participation thereby enhancing rural dwellers income and by extension rural development. Although, this study had made a significant contribution to rural development literature, however, the study failed to

mention the exact number of samples for the study which was one of the limitations of this study.

In line with the above study, Demissie and Legesse (2013) study the extent of income diversification of the rural households through the cross-sectional data gathered from Fedis District of Eastern Hararghe Zone, Ethiopia. The research used both economic models and descriptive statistics to analyses the collected data. Moreover, the study used Tobit model to analyses the non/off-farm income, while Multinomial logit model was utilized in identifying the factors that influences the household's participation in non/off-farm programmes. The findings from the descriptive statistics indicates that, agricultural activities are the major source of rural household's income in Fedis, and it contributed 77 percent of the income of the households, while the remaining 23 percent were earned from non-agricultural activities. The study also shows that, 84 percent of the households undertakes the non/off-farm vocations and only 16 percent of the households were involved in non/off-farm occupations. The participation in non/off-farm vocations and the extent of incomes earned were influence by related human capital variables (age of the household's heads and gender; household's heads education levels and the number of children attending school as well as the numbers of economically active members). Based on livelihood diversified strategies (crop-based diversification which is based on the different number of crops grown and successfully harvested). This could also be determines based on infrastructurae associated factors such as (closeness to source of market). The findings from the study connotes that, the identified factors in this study needs to be put into consideration by policy makers in the planning and implementation of their non- agriculture initiatives and the agricultural policy thrusts.

Teklewold (2013) assessed the adoption of multiple sustainable agriculture as a strategy for rural development. The result of this study indicates that, there is significant correlation between multiple sustainable agriculture and adoption. The result further reveals that, adoption of sustainable agriculture was equally influence by labor availability, household trust in government support, rainfall, spouse education, credit constraint, and plot level. This study has contributed to rural development literature, but the study had not mentioned the sample used which was the limitation of this study.

Todo (2013) examine the effect of farmer field school on skills acquisition and agricultural income in Ethiopia. The study adopted a survey approach where household were selected as sample for the study. A total of 269 household were selected from a panel list data to serve as sample for the study using random sampling techniques. The result of the findings shows that, field school participation by farmers significantly increase household income per employee ranging from 60 to 160 USD on average which was more than the average income of the worker before the project. The study further found that, field school externalities extends to alleviation of deforestation and poverty through improved income of the rural dwellers. The study also found that, the increase in income as a result of participating in field school by the rural household was due to the adoption of new agriculture practices such as the use of new seeds varieties, and new implement. One of the shortcomings of this study was that, the household sample were not drawn from the usual techniques due to the non-availability of a comprehensive list of all the household in the study area. This study has contributed to the literature on rural development from agricultural perspective which was the predominant approach to rural development in the past decades.

Equally, Khatun (2012) assessed the rural livelihood diversification in Western Bengal India. The study adopted a survey approach and household were selected as sample for the study. A total of 269 household were selected from two districts Burdwan and Purulia to serve as sample for the study using purposive random sampling techniques and multiple regression analysis was used in analyzing the data. The result of the multiple regression shows that, level of education, age, social status, asset, ability to access credit, infrastructure and climatic condition were some of the factors that influence household diversification. The study further found that, poor asset based, poor infrastructure, lack access to credit, and lack of awareness were some of the factors that hinders household livelihood diversification. The study suggests that, to encourage livelihood diversification by the household, government should assist in providing the necessary infrastructure such as road, electricity, market, ICT facilities, storage facilities, and provision of financial institutions for providing loan to the less privilege in the rural area. One of the shortcomings of this study was that, the household sample was not adequate for generalization outside the scope of the study.

In a related study, Adepoju (2013) investigated the diversification of livelihood and welfare of the rural household in Ondo state Nigeria. The study adopted survey method, and data was analyzed by the means of descriptive statistics and regression analysis by using multinomial regression as well as econometric analysis. The sample was drawn through multi-stage sampling techniques where 143 respondents were selected as the sample of the study. The study finds that, education, household size, level of income were some of the factors that determine household diversification. The study further found out that, a combine income from farming and non-farming have positive effect on the welfare

of the rural people in addition to income farming activities. The study suggests that, government and all stakeholders should work together to promotes the creation of non-farming jobs in order to compliment the farming income of rural people for a sustain rural development. The study was a good attempt in looking at the issue of rural development from agricultural perspective which was the traditional approach, however, the sample of the study was too small to make a generalization outside the scope of the study.

Energy is an important element in development thrive, without which development of any kind cannot be achieved, some studies viewed rural development from energy perspectives, for example, Igbinovia (2017) examined the rural electrification in relation to rural development in Edo State Nigeria. Result from the survey indicated that, the percentage of the electrified towns as compare with the total number of towns in the state was 18 percent, and this has significantly affected the lives of the rural Edo people negatively. The study suggests that, to come to the aid of the rural people in terms of economic disposition, government has to partner with all stakeholders in the state to provide a stable and reliable electricity for socio-economic activities to thrive and by extension rural development and national development. This study has added to literature on rural development from energy perspective which was a good attempt as electricity is the backbone of any technological advancement without which no meaningful development can be achieved.

In a related study, Akpan (2013) examine the impact of rural electrification on the micro-enterprise in Niger Delta Nigeria. The study employed mixed method qualitative and quantitative approach, and the data was obtained through questionnaire and personal

interview with the owners of enterprise. The outcome of the findings shows that, those communities who were connected to the national electricity grid were more likely to be profitable in enterprise than those who were not by 16.2 percent, even though, the statistics was not significance, and those who use generator as a backup get more profit than those who could not afford generator. The findings further reveal that, most micro business enterprise owners acknowledge the importance of generator in making more profit from their business and can afford to buy one whenever necessary. The study also reveals that, generating set accrue additional cost to micro enterprise business as a result of cost for fuel and maintenance which affect the profit margin of the micro enterprise business in the rural areas .The study recommends that for the rural electrification to be more efficient and effective in stimulating and boosting rural enterprise, the national generating capacity should be increase to connect more villages with national grid as this will bring about the spring up of more rural enterprise and rural development by extension. This study has made a contribution to rural development literature from energy perspective.

Simultaneously, Johnson (2014) examined the impact of bioeconomic in rural development. The objective of this study was to assess the efficacy of bioeconomic in transforming the rural areas. The study adopted conceptual approach, as such the data for the study was gathered from the secondary source and was analyzed by the means of citation and analytical analysis. The study contends that, for everything that human beings does there is energy, energy is the vehicle of any kind of development be it national, regional or rural. The study further argues that, rural areas can benefit from bioeconomic as they have advantage of space and conservation from which bioenergy are generated, another benefit of bioenergy was the relative cost, as it is source locally which the cost

may not be beyond the ordinary rural people. This study has contributed to the literature in rural development from energy perspective, however, being a conceptual approach, the study lacks the strength for generalization which was the limitation of this study, future research should adopt a quantitative or case study approach.

In line with the above study, Faridi (2011) examined the impact of bioeconomic in rural development. The study adopted conceptual approach, and the data for the study was gathered from the secondary source and was analyzed by citation and analytical analysis. The study contends that for everything that human beings does there is energy, energy is the vehicle of any kind of development be it national, regional or rural. The study further argues that, rural areas can benefit from bioeconomic as they have advantage of space and conservation from which bioenergy are generated, another benefit of bioenergy was the relative cost of bioenergy especially for the rural people as it is source locally. This study has contributed to the literature in rural development from energy perspective, however being a conceptual approach, the study lacks the strength for generalization which was the limitation of this study.

Education was recently discovered as the viable mechanism for rural development, for example, Olojede (2013) examined rural education as the solution to socio-economic development of Nigeria. The study contends that, literacy is very important to individuals, group and society as it helps in inculcating values, and norms which are essential ingredients for socio-economic development of any society. The study further argues that, literacy benefit individuals in such ways as in education, numeracy, reading, handwriting, healthcare, and political awareness. The study also argues that, despite the unprecedented

growth of school enrolment there is still more people that are illiterate, particularly the rural people which as a result breeds unemployment, poverty, violence, and political instability. The study, therefore, suggests that, for sustainable rural development to be realize in the rural areas, more schools must be provided to cater adequately for the educational needs of the rural areas. This study has contributed to rural development literature from literacy perspective, however, the study lacks the strength for generalization as the study was a conceptual approach.

Similarly, Kainuwa (2013) examined the influence of parent socio-economic and educational background on child education in Nigeria. Examining parent's socio-economic status and educational background was the aim of the study. The study utilizes conceptual approach and the data for the study was sourced from secondary source, and analytical as well as citation methods of analysis were utilized. The study argues that, educational and socio-economic status of parent did have influence on children's educational attainment. The study further concludes that, children from rich family were more likely to remain in school than those from poor family, further, the study contends that, children's enrolment, and completion were significantly related to parent socio-economic and educational status which can lead to poverty. This study has contributed to literature on rural development from education perspective, but one of the limitations of the study was its approach which was conceptual, as conceptual study lacks the strength for generalization.

In the same vein, Omoniyi (2013) examines the role of education in poverty alleviation and economic development. The objective of the study was to examine the role of

education in poverty eradication and economic development from a theoretical perspective. The study employed conceptual approach and the data for the study was obtained from secondary source and citation method of analysis was utilized. The study contends that, education is one of the essential vehicles for achieving sustainable economic development through human capital development. The study further contends that, education encourage self-understanding, enhances live quality, improve productivity and creativity as well as technological and entrepreneurship skills, also education plays in obtaining economic and social advancement in terms of enhancing income which could lead to poverty reduction and employment generation. This study has contributed to the role of education in poverty reduction literature, however the study being a conceptual approach does not have the strength for generalization outside the scope of the study.

Equally, Nworgu (2013) examines the disparity between rural and urban childs educational achievement in developing countries. The study adopted a conceptual approach and the data was obtained from sample template over some decades. The study argues that, rural childs were left behind when compare with urban childs in all aspect of educational achievement. The study further contends that, this situation of neglect if allow to continue will adversely have effect on the development of the rural community in the developing world. The study therefore suggests that, a well-articulated rural education strategy should be formulated to address the rural-urban educational achievement disparity. This study has contributed to rural development literature in relation to education, but the study lack strength for generalization as it a conceptual approach.

In a related study, Hlalele (2014) examines the concept and practice of rural education in South Africa. The study adopted conceptual approach and data was collected through the secondary source and citation and analytical method of analysis was utilized. The study argues that, rural areas as a component of national sustainable development needs a viable education that offers learners the necessary knowledge and skills that will predisposes them to a high paid job, and a responsive citizen. The study further contends that, rural people viewed education as fundamental to effective and efficient socio-economic development strategy in the rural areas which is likely to help in providing skill manpower that is essential for rural development, increase innovation, reduce social and economic inequality, and foster sustainable development. The study has contributed to rural development literature from education perspective.

In the same vein, Maertens (2011) examines education pay off in rural India. The study adopted a survey method where three villages were selected as sample for the study and the data generated was analysized by regression analysis. The outcome of the analysis shows that, general perception of return to education across the three villages differs from one village to another, from one region to region, from parent to parent, and from caste to caste. The study further reveals that, the returns to education increases as the level of education increased for example, a postgraduate was expected to earn more than a degree or diploma holder. This study has contributed to the literature on rural development pertaining to returns on education, however qualitative study needs to be conducted to support the findings of this study.

Accordingly, Awan (2011) examined the role of education in rural development in Iran. The objective of the study was to examine the education's role in rural development effort in Iran. The study adopted a conceptual approach and the data for the study was obtained from a secondary source, and the method of data analysis was analytical. The study argues that, education indirectly increase output through its interaction with other institutional variables. The study further contends that, education is seen as one of the tools of empowering people to become useful to themselves, the community and the society at large, it is the mechanism through which people help in upholding good tradition, values, knowledge, and skills that are imperative for rural transformation. The study concludes that, education is a viable tool for rural development as such there is need to provide education in the rural areas to speed up rural transformation which in turn enhances the living condition of the rural dwellers. This research work has added to literature on rural development, however, being a conceptual, the study lacks the capacity for generalization outside the scope of the study. Future study needs to be conducted on similar topic using different approach and methodology and from a different context such as Africa, Europe, America and East Asia. Another area that can strengthen this study is the sampling, a good reasonable number of samples is always good for generalization.

In a related study, Kilasi and Havnevik (2011) examines the impact of education on rural community development of some selected Haydom Lutheran hospital's education programmes in Mbulu district, Tanzania. The study used case study approach, and qualitative research design. The findings demonstrate that non-formal education and formal education system played a significant role in improving the well-being of the rural dwellers around the hospital. The rural education system also helped in the capacity

building of the rural populace and this was evidenced on the number of pupils that graduated from the vocational trade school, secondary school and primary school around the area. The study suggested that, the educational system should be established to improve the condition of living of the local community domiciling with the region. The study further recommends that, education should be established in the region in a participatory approach to enhance the contribution of the community. This will give them a sense of belonging to see the programme as their own initiatives and not an imposed or top down programme. This participatory approach will help in the sustenance of the programme by the community working towards the future development of the programme. The study has highlighted the significant impact of education in the life of rural community in Tanzania. However, the study employed a qualitative design which gives an in-depth comprehension of the study. But the study of this magnitude that represent the entire nation of Tanzania would have been more appropriate to co-opt quantitative research design which allows the use of statistical expressions of the quantum effect of education on the rural community.

Simultaneously, Abuya, Ciera, and, Kimani-Murage (2012) explored the impact of mother's education on children's nutritional status living in Nairobi's, Kenya slum settings. The study used the data of 5156 children aged 0 to 42 months. The data was collected between the month of October 2009 to January 2010. The study employed binomial and multiple logistic regression statistical tool to evaluate the influence of education in both univariable and the multivariable models. The findings revealed that, close to 40 percent of children were characterized with poor health development. Thus, maternal educational level is an important predictor of children impair health

development. The maternal education levels also determine some other associated factors to child stunting such as child education level, child birth weight, pregnancy intentions, health seeking behavior, and household social economic status are being determine by the mother education levels to avert child stunting. The study argues that, the mother's education level remains the strong predictor of children's healthy development in urban slum settings. This study disclosed that, entrenching girl-child education will break the cyclical chain of poverty amongst the urban dwellers in Nairobi, Kenya.

Equally, Shemyakina, (2011) evaluate the impact of the conflict on school enrolment by children in the mandatory age group, ages 7 to 15 in Tajikistan of the former Soviet Union. The study also assesses the effect of exposure to conflict on the mandatory completion of schooling by adults. The study report that, exposure to conflict through the damage of household dwelling resulted in poor enrolment of girls and no effect on the boy's child school enrolment. Furthermore, the study found that, girls who were at school age and reside in the conflict affected regions had 12.3 percent and are less likely to complete the mandatory schooling when compared with girls that were privileged to complete their mandatory schooling prior to conflict, and they are as well, 7 percent likely to complete their schooling before the girls of the age who resides in the unaffected areas of conflict. The conflict in Tajikistan created a generational and significant regional disparity in women education attainment. This is because the armed conflict resulted in the destruction of some school structures and other education related infrastructure within the conflict prone regions. This study, therefore, contend that conflict is globally recognized as one of the constraints to rural community education.

Equally, Winters (2011) examines the role of human capital in poverty reduction in Mexico. The aim of the study was to examine the potentials of oportunidades as rural development strategy program in a broader perspective through analysis of the income generating activities of the recipient. The study adopted cross countries survey method and the data was obtained from 180,000 household, the respondents were selected from 6,000 communities using random sampling techniques and descriptive and least square logarithm was used in data analysis. The findings of this study reveals that, education was a key determinant in participating in some certain activities and those with educational qualification higher than primary school were more likely to gain employment in more lucrative employment other than farming, furthermore, secondary school education appear to be a determining factor in participating in agricultural wage activities in remote areas and the participation was more when the individual was close to a large population. The study also found that, education generally has an influence over the choice of rural household on participation and the level of the impact was mitigated by household assertion and location. This study has contributed to rural development literature from poverty alleviation perspective in relation to education.

In the same vein, Attanasio, Meghir, and Santiago (2011) used structural model through an economic mode to analyze a randomized experimental data in Mexico to examine its influence on school participation. The study found that, grant has a stronger effect on school enrolment than reduction in child wages. Similarly, the program has a positive impact on the children school enrolment, particularly after primary school. Further, the study also reports that the programme has some marginal effect on child wages which resulted in the reduction in the effectiveness of the programme. Finally, the increase in

revenue allocation of the programme in favor of the secondary school enrolment and eliminating the primary school children from the programme has a larger influence on the programme. While, the increase in secondary school has a minor impact on the children school enrolment. This implies that financial support of the "progresa" programme has a substantial effect on children enrolment programme.

Equally, Byun, Meece, and Irvin (2012) employed random sampling technique through longitudinal to investigates the factors that posed as constraints to disparities to the rural-nonrural enrolment and completion of youth's degree. The findings indicate that, rural students benefitted more of the community social resources than non-rural students. These resources facilitate significant increase in the number of youths completing their degree programmes. Additionally, the results further show that, the rural youths were at a disadvantage when compare with the non-rural in relation to successful completion of their bachelor's degree due to their poor socioeconomic backgrounds. The study has been able to bring to the fore the effect of geographic location in the successful completion of youth's bachelor's degree. The implication of this study indicates that, more resources need to be allocated to the rural community for youth's school enrolment and completion of their bachelor's degree to commensurate with their counterparts the non-rural students.

In the same vein, Abuya, Ciera, and, Kimani-Murage (2012) explored the impact of mother's education on children nutritional status living in Nairobi's, Kenya slum settings. The study used the data of 5156 children aged 0–42 months. The data was collected between the month of October 2009 to January 2010. The study employed binomial and multiple logistic regression statistical tool to evaluate the influence of education in the

both univariable and the multivariable models. The findings revealed that close to 40 percent of children were characterized with poor health development. Thus, maternal educational level is an important predictor of children impair health development. The maternal education levels also determine some other associated factors to child stunting such as child education level, child birth weight, pregnancy intentions, health seeking behavior; household social economic status are being determine by the mother education levels to avert child stunting. The study argues that, the mother's education level remains the strong predictor of children's healthy development in urban slum settings. This study disclosed that entrenching girl-child education will break the cyclical chain of poverty amongst the urban dwellers in Nairobi, Kenya.

Equally, Stelmach (2011) synthesizes the problems influencing secondary schools and rural primary schools and how the different organizations address the identified challenges. The study employed topical technique of investigation regional research design. The study uses Bronfenbrenner's ecological theory as a framework for the thematic literature review as basis for analysis. The study posited that the way out of issues influencing rural education was to embrace inter-sectoral and collaborative responses.

Agha and Carton (2011) assess the impact of economic, demographic and program factors on the use of maternal health facilities in Jhang district, Pakistan. Household survey was conducted on married women with children within age of 12 months or younger were interviewed. The study also collects its data from 2018 women on socio-demographic characteristics and the use of health services. Education was found to have had the largest effect on women institutional delivery. Furthermore, women who possess primary or

higher education were found to use more of institutional health services for child delivery than those illiterate women. The study also revealed that, extent of household wealth, autonomy, age, exposure to mass media and proximity to health services centers were also identified as important drivers of women institutional child delivery. Also, the study found that, women use of family planning after a year of child delivery was low, while approval from husbands in the use of institutional child delivery was found to be the strongest determinants of women institutional use of health services child delivery. The findings suggest that rural women will respond to well-designed maternal interventions that remove physical and financial barriers on the institutional child delivery services.

Commonly, Attanasio, Meghir, and Santiago (2011) used structural model through an economic mode to analyses a randomized experimental data in Mexico to examine its influence of school participation. The study found that grant has a stronger effect on school enrolment than reduction in child wages. Further, program has a positive impact on the children school enrolment, particularly after primary school. The study also reveled that, the programme has some marginal effect on child wages which resulted to reduction in the effectiveness of the programme. Furthermore, the increase in revenue allocation of the programme in favor of the secondary school enrolment and eliminating the primary school children from the programme has a larger influence on the programme. While, the increase in secondary school has a minor impact on the children school enrolment. This implies that financial support of the "progresa" programme has a substantial effect on children enrolment programme.

Relatedly, Khurram (2013) examine the effect of youth unemployment on rural development in Pakistan. The study employed qualitative method and the sample for the study was drawn from Tehsil Jaranwala, and Faisalabad through a multi-stage random sampling technique. 120 respondents were selected for interview and to serve as the sample of the study, and descriptive statistics was used as method of data analysis. The outcome of the analysis shows that, the resultant effect of unemployment among youth in the rural areas leads to depression, anxiety, crime, drug related vices, corruption and dishonesty. The study further found a significant relation between educational level and income of family with rural youth unemployment. The study suggests that for the government to reduce the menace of unemployment to the bearest minimum, the system of the education should focus on entrepreneurship development. This study has added to the body of knowledge on rural development from education perspective.

Relatedly, Crivello (2011) examined the youth transition through education and migration in Peru. The study adopted a qualitative approach and the data was generated through in-dept interview involving four rural communities in Peru. The result of the analysis shows that, education, migration and lucrative job have significant influence on rural people's escape from poverty and marginalization. The study further contends that, education helps people in being successful in childhood as well as in transition to youth. This study has contributed to the body of knowledge on rural development literature from educational perspective which is related to the present study. The study suggests that, government should provide more schools in the rural areas to educate the rural people especially youth to reduce poverty in the rural areas. One of the shortcomings of this study was that, the exact number of the sample of the interview was not mention. Another limitation of the

study was that, the study did not mention the type of sampling techniques used in drawing the sample from the four communities.

Commonly, Malik (2011) examined the impact of education on women empowerment in Pakistan. The objective of the study was to examine the impact of education on women empowerment. The study adopted a mixed method quantitative and qualitative approach, and the data was generated through structure interview and survey instrument. Of the 102 public universities in Pakistan, 10 were chosen each from the four regions of Pakistan and two from the Federal Capital, a sample of 1,500 was drawn which comprise 320 faculty members, and 1500 survey instrument was distributed to female student and 1, 290 questionnaire were returned accounting for 86 percent rate of return, and of the 320 administered to female faculty officer, 290 were returned accounting for 92 percent rate of return. The findings show that higher educational attainment has a significant influence on economic independence and status within a family as opined by 71 percent respondents. The study further found that, education helps women to overcome discriminatory practices within the community and thereby lead women to exercise their legal right and allow them to have a say in the community. The study also reveals that, although higher education had helped women in knowing their right, yet there were still cultural hurdles that prevent women from fully exercising their right when it comes to divorce and inheritance as attested by 61 percent of female faculty members. Furthermore, the study found that, higher education has enabled female to have an impact on her immediate family, distance family, friends and the society at large. The study commends that subsequent educational policy should prioritize gender equality at all levels of education especially at higher education level. This study has contributed to the body of

knowledge on rural development literature from educational perspective which is related to the present study. However, one of the shortcomings of this study was that, the exact sampling techniques used in drawing the sample was not mention, similarly, the study did not mention the type of statistical tool used in analyzing the data.

In the same vein, Sherman (2011) examined the role of rural education in sustaining the existence of rural communities in USA. The study adopted a mixed method of qualitative and ethnographic approach, and the data was generated through in-dept interview while data for the ethnographic was sources through field survey where the researcher visit and participate in social activities in the area to have a firsthand understandings of the rural settings. The study found that, rural schools act as the symbol of the rural communities in terms of vitality and the location of the community itself. The study further reveals that, there was concern in the community among the elders that most good morals among youth was declining as many of the men Golden Valley did not finish school before going to seek for work in the forest. The study also reveals that, moral decline was perceived in falling number of school enrolment, and low level of parent participation in school activities. Furthermore, the study found that, rural school plays a vital role in upbringing of children and socialization process of the rural community, it also plays a role in making inclusion or exclusion in terms of the community limited resource and social support. The study suggests, that government should provide more schools in the rural areas to educate the rural people especially the men to curtail the problems of drain brain. One of the shortcomings of this study was that, the exact sampling techniques that was used in drawing the sample was not mention. Again, the study was not able to mention the type of statistical tool used in analyzing the data.

Relatedly, Burchi (2006) examined the role of education in socio-economic development of the rural people. The study adopted a survey approach and the data was generated through survey instrument. The study found that, education act as the fundamental factor for achieving food security in rural areas of the developing countries. The study further reveals that, education was intrinsically and instrumentally relevant for development as education plays a vital role in economic growth and social change. The study also reveals that, basic education has the capacity of boosting food security as 100 percent increase in school attendance can reduce food insecurity by 19 percent at P Value of 0.000. Furthermore, the study found that, education affect the lives of rural people positively particularly those of the less advantage, and the contribution of the education goes beyond the economic growth to social growth. One of the shortcomings of this study was that, the exact sampling techniques used in drawing the sample was not mention. Also, the study was not able to mention the type of statistical tool used in analyzing the data, and this has affected the strength of the study for generalization.

From a different perspective, Rabirou (2012) assessed the effect of transport on agricultural productivity in Oyo State Nigeria. The objective of the study was to examine the effect of transport on agricultural productivity in Oyo State Nigeria. The study employed a survey approach and the data for the study was generated from 230 respondents who were selected using random sampling techniques, and descriptive statistics and Herfindhal Index Technical Efficiency was used for data analysis. The result of the analysis shows that, a substantial number of the farmers were in their 50s and majority of them owns one plot of land with distance of 5 to 10 KM from their homes. The study further found that, the farmers acquire farms through inheritance, and they

employ intensive farming of crop diversification as risk management strategy. Furthermore, the result reveals that, trekking, motorcycle, and car were the main means of transportation in the area, similarly technical efficiency of food farmers was p=0.82 with significant efficiency effect, and inefficiency result shows positive effect of distance, crop diversification and untired road on farmers productivity, whereas low level of education, trekking, use of bicycle and weekly working time, negatively affect famers efficiency. The study suggests that to optimize farmer's productivity as was affected by trekking, use of bicycle, the adoption of motorized mode of transport will help in increasing farmers productivity. This study has contributed to rural development literature from agricultural perspective.

In a related study, Oisasoje (2012) examines the role of public infrastructure in poverty reduction in rural Edo State Nigeria. The objective of the study was to examine the role play by public infrastructure in poverty reduction effort in rural areas of Edo State Nigeria. The study adopted a triangulation approach, where three method of data collection was used questionnaire, interview and observation. The outcome of the findings indicates that, there was inadequate and uneven distribution of infrastructural facilities in the area under study. The study further reveals that, infrastructure has a positive impact on the lives of the rural people, such as in poverty reduction, healthcare, employment, and literacy. The study also observed that, lack of accessibility, inadequacy, lack of maintenance of the existing ones, and neglect of rural people by the government officials were some the problems that militate against adequate provision of public infrastructure in the rural areas. This study was a good attempt in looking at the issue of rural development from public infrastructure perspective, however, the study failed to mention

the exact number of samples that was used for the study, and the method of data analysis was not mention either, and this limit the strength of the study in terms of generalization. Future study should specify the number of the sample which will form the basis for generalization outside the scope of the study either regionally, nationally or globally.

Rural development is viewed from leadership perspective by some studies for example, Udensi (2012) examines the challenges of community leadership in relation to community development in Boki Local Government of Cross River State Nigeria. The objective of the study was to examine the challenges faced by community leadership in fostering community development in the rural areas of Cross River State. The study employed survey method, and 150 questionnaires was distributed to community leaders which were selected using a multi-stage sampling technique, and descriptive method of data analysis was used in analyzing the data. The result of the analysis indicates that, leadership position was not confined to a particular age group, it cut-across all ages, and the duration of leadership tenure has a vital role in determining the success of community project. The study further shows that, the challenges faced by the community leaders and the level of their knowledge of leader's participation in community development project has a negative implication for sustainable community development in the rural area. The study commends that, more and committed leaders should be identify and be given the responsibility for improving the welfare and the living condition of the rural people. This study has added to literature on rural development from a leadership view point.

In a related study, Volk (2014) examined the role of local groups in financing rural development project in Slovenia. The objective of the study was to analyze the role of

formal and non-formal group in determining the suitability of rural development project in rural Slovenia. The study adopted mail survey method, and questionnaire was distributed to 267 Board Members of the 33 local government board and 103 useable questionnaires was duly completed and return which accounted for 39 percent rate of return. The questionnaire was then keyed into statistical package for analysis, regression and descriptive analysis was utilized in testing the two hypotheses of the study. The outcome of the analysis shows that 6.2 billion pounds was spend on co-financing leaders project which represent 26 percent of fund allocated. The study further reveals that, informal group leader has a significant influence on its members on decision making pertaining to project to be co-finance, while the formal group had an insignificant influence on its members pertaining decision on co-financing of project. Furthermore, the study found that, local stakeholders lack the capability for implementation of leader development approach as attested by result of in-dept survey interview. Also, the finding of this study reveals that, there is positive correlation between local government board members and informal system of local government performance on the suitability of rural development co-financing, the finding also reaffirm the non-significant impact of formal local government board performance on the perception of the board members selection of project of rural development which were suitable for co-financing by the leader axis. This study had contributed to the literature on rural development, however, a qualitative approach was suggested to support the statistical findings.

Relatedly, Tolić (2015) examined the implementation of leader approach to rural development in Croatia. The study contends that leader approach to rural development is a bottom-up based approach where the communities in the rural areas are more involve in

the conception and the implementation of the program. Furthermore, the study contends that, individuals, association and other local stakeholders tends to have a significant role in initiating the program which could lead to the formation of local government local action group of at least 2 and other small towns which could have up to 25000 citizens as its target. The study further argues that, leader approach or program 202 measures were implemented in 2013 which the local government were faced to shoulder some of the finances. The study suggests that, as the Croatian local government covers 80 percent of the total land there is need to partner with other development sector in order to achieve some long term strategic rural development objectives. This study like that of Volk had contributed to rural development literature from the leader perspective, however, there is need to undertake this kind of study either quantitatively or qualitatively to allow generalization outside the scope of the study.

From local government perspective, Lawal (2014) examines the role of local government in rural infrastructural delivery in Nigeria. The study adopted conceptual method where data was sourced through secondary source. The study argues that, local government are very important in terms of service delivery as they geared toward stimulating development at the grassroots. The study further contends that, in most rural areas, provision of infrastructure is inadequate, and where there was infrastructure, they are hardly in good condition and they are mostly in shamble or degraded state. The study suggested that, for local government to be able to meet up with the expectation, their funding has to be increase from the federation account and they should also devise means of generating internal revenue to supplement the federal allocation, the study also commend that, undue interference into the affairs of the local government by state and central should be

discouraged. This study has contributed to the literature on rural development from local government perspective, however, the study failed to present the primary data which the study stated that it has used both primary and secondary source of data.

In the same vein, Njoh (2011) examined the role of municipal council, international NGOs and citizen in public infrastructure development in rural areas of Cameron. The objective of the study was to examine the contribution of citizen participation in rural infrastructure development. The study utilizes conceptual approach and the data for the study was sourced from one international NGOs, and four governmental councils in rural Cameron. The study through analytical analysis, reveals that NGOs act as the main provider in terms of funding, technical and organizational expertise, municipal council coordinate and supervise the activities of the citizen participation which was designed to utilize the public infrastructure project in the rural areas. The study further reveals that, exogenous factors such as external interference by federal government and endogenous factor such as insufficient skilled manpower militates against the effort of the council, also the tendency for the federal government to site local project was identified as another obstacle to citizen participation in rural infrastructure development. The study argues that, the tendency of citizen to participate in and contribute to either in kind or financially is a function of their perception of the project as theirs. The study has contributed to the literature in rural development from a self- help perspective.

In the same way, Yakubu (2012) analyses the framework of NAPEP with a view to ascertain the impact of the programme on the people of Giwa Local Government area of Kaduna State. The study focused specifically on poverty eradication and its effects on the

wellbeing and condition of living of the rural dwellers. The study adopted purposeful and simple random sampling technique, using a sample of 220 respondents drawn from the entire population of the local government. Data were collected from the respondents through scheduled interview and questionnaire administered to 179 respondents. Major finding of study revealed the failure of poverty alleviation programmes (NAPEP) in Giwa Local Government Area. However, as a way forward, the study advocates that NAPEP should work in harmony with other ministries and agencies that are stakeholders in the fight against poverty in the areas of provision of credit facilities and skills training through a holistic approach. The study serves as a good attempt for looking at rural development in relation to poverty alleviation, but one of the limitation of the study was its lack of adequate data which will allow for generatliization out side the scope of the study.

From other perspectives scholars view rural development effort, for example Faridi and Basit (2011) examined the determinants of rural labor market participation. The study collected its primary data and employed binomial logit regression tools to determines the factors that facilitates rural labor market participation. Findings revealed that, economic capital index, education, and social capital have significant impact on rural labor supply market. Additionally, the findings further revealed that, the size of land holdings and number of livestocks have a significant negative impact on rural labor force participation. The study recommends that, emphasis should be laid on the improvement of education facilities and rural infrastructural facilities. This study has contributed to the literature in rural development from infrastructural perspective, however, the main limitation was its lack of precise sample which could be use as basis for generalization.

Equally, Silviu (2011) examine the socio-economic sides of rural development in North-East of Romania. The aim of the study was to examine the socio-economic dimension of rural development in Romania's North-Eastern region. The study adopted a qualitative case study approach involving six counties of the North-East region and uses SWOT analysis as the method of analysis for the study. The study contends that, agro-tourism and off the farm activities could serve as the solution to the problems of region which include social and economic. The study further suggests that, improving infrastructure in the region could lead to increase in economic activities which in turn could lead to living standard enhancement of the rural people and by extension rural development. This study has contributed to literature in rural development, however, a quantitative research will be needed to support the argument of this study.

Consistently, Oruonye (2013) examine grassroots democracy and the challenge to rural development in Nigeria. The objective of the study was to examine the challenges of grassroots democracy in relation to rural development in Bali Local government area of Taraba State Nigeria. The study adopted a case study method, and the data was generated through focus group interview with stakeholders that involved past and present local government chairmen, senior local government staff, members of the political parties, traditional rulers, and community members of the local government. The result of the interview shows that, undue interference of the affairs of the local government by the state government and the issue of joint account has hindered the actualization of grassroots democracy in Nigeria. The study further reveals that, frequent interference in the affairs of the local government had led to incapacitation of the local government in terms of service delivery to the rural people, and it has also led to existence of corruption in the

system. The study commends that constitutional amendment should be done to allow local government to have their autonomy and be free from the joint account syndrome.

Conventionally, Esparcia (2014) examined the role of innovation and network in rural development in relation to EU innovative projects. The objective of the was to analyze several project innovations in a couple of EU countries. The study adopted a case study approach and the data for the study was generate through in-dept interview. The outcome of the in-dept interview as was analyzed, shows that, innovation was common among food production sector, energy and environmental as well. The study further found that, these projects relied heavily on large network where the public sector play a dominant role. This study has added to the literature in rural development from a different perspective, however, the study did not mention the number of respondents involve in the in-dept interview as such the sample might not be rely on for generalization.

Similarly, Hartel (2013) assessed the integrating of biodiversity conservation, and farmland with rural development in Central Romania. The study adopted qualitative method, using a combination of both structured and unstructured interview schedules as the instrument of data collection. 30 villages were selected to serve as sample for the study within Southern Transylvania rural settings. Findings from the study indicates that, most EU policies were oriented toward economic development at the expense of biodiversity. The study further reveals that, funding from EU for rural development programs were not well communicated to the stakeholders. The studies suggest that, NGOs should be strengthened in such a way that, they would ensure that the EU implementation of rural development policy or strategy conforms to the needs of the local people. This study had

made a good attempt in examining the integration of biodiversity with rural development policy, however, one of the limitations of this study was that, the number of those interviews was not mention, only the number of the villages selected were mentioned.

Traditionally, Rajovic (2015) examines the geographical aspects of rural development in relation to Montenegro. The study contends that, EU had provided a strong mechanism of synergy to social and robust valorization of local development opportunity. The study further contends that, investment in industry in the rural areas will be in the interest of the Montenegro as it will create employment and stimulate growth, and by extension rural development. The study had made a good attempt in looking at rural development from industrial perspective, however, its lack of strength for generalization, as it was a conceptual approach.

Relatedly, Boggia (2014) examines rural sustainability development potentials through a dominance based rough set approach. The aim of the study was to study the rural sustainability potential, using dominance rough approach to assess the level of rural sustainability development in some specific rural areas. The study adopted a case study approach and choses Umbria, Italy as the area under study. The study used DRSA to analyze the level of sustainability of 92 municipal areas of the Umbria region and the result from the analysis shows high potential, in terms of management and planning and decision support. This study has contributed to the literature on rural development sustainability which is a new concept in the rural development literature. However, the sample used for the study was not adequate enough for generalization.

Accordingly, Berdegué (2015) examines the spatial diversity of rural development in relation to structure, coalition and institution in Latin America. The study adopted case study involving 19 rural areas of Latin America. The aim of this study was to compare main findings of the determinant of territorial diversity and the implication for public policy. The study contends that, sustainable territorial growth does not come up spontaneously without concerted and tacit coordinated actions of different actors. The study further contends that, factors such as the relationship of territories with the market and governance of natural resources can lead to a successful territorial development. This study contributed to literature on rural development from a diversity perspective, however more studies on quantitative and qualitative approach should be conducted to strengthen findings from this perspective.

From endogenous model perspective, Margarian (2013) examine the criticism of endogenous rural development approach in relation to EU support of rural areas. The study adopted a conceptual approach, and comments that endogenous rural development approach has gain attention over the past decades within the EU rural development rhetoric. The study further contends that, an integrated rural development perspective, which allows local coordination and support, is mostly determine by local condition. The study argues that, rural development programs that leans toward economic development and growth, remains a second alternative even though they have local coordination and support. The study suggests a blend of both the endogenous and exogenous approaches as the best alternative that could help speed up the drive for rural transformation. This study has contributed to rural development literature, however being a conceptual study, the study lacks the strength for generalization.

In a related study, Mikus (2012) assesses the rural competitiveness in relation to rural development policy in Croatia. The study adopted quantitative method and regression analysis was used in analyzing the data. The outcome of the regression analysis reveals that, the rural areas of Zagreb were less competitive than those of other Croatian counties by 8.45 percent. Similarly, the findings show that, local government significantly influence other economic factors of rural competitiveness as regression analysis and correlation result have indicated. The data obtained through structure interview shows that, lack of proper decentralization, red-tapism, nepotism, unskilled manpower in the public administration were some of the factors that hinders rural competitiveness efficiency in rural Zagreb. The study suggests that, to improve rural competitiveness priorities should be placed on how to stimulate competitiveness at the micro and macro level. This study had contributed to rural development literature from the policy perspective, however, several villages could have been including in the sample to strengthen the sample of the study.

Assessing rural development from different perspectives, Pollermann (2013) examines the rural development opportunities and obstacle in relation to smart places through leadership approach in Germany. The study adopted survey method involving local action groups as the respondent of the study. The outcome of the analysis shows that, there is a positive result on quality of cooperation and communication within the local action group. The study suggests that, to gain an optimal benefit of a leader's approach, more freedom is required for local managers in achieving their desire objectives. This study has contributed to rural development from the perspective of a leader's approach, however, the study fails to mention the sampling size used for the study, and as such, the result of

this study cannot be relied upon for generalization within and outside the scope of the study area.

Similarly, Medonos (2012) examines the effect of investment support in relation to rural development programs in Czech's Republic. The study adopted qualitative survey method, where interview schedules were conducted to generate responses from 20 farms owners. The data obtained were analyzed through the means of both qualitative tools of analysis. The outcome from the analysis indicated that, investment support has a significant influence on business expansion, productive improvement, and by extension, rural development. The study recommends that, investment support should be given priority in government planning, as this will bring about rural development. This study had contributed to rural development literature, however the sample used by the study was also not adequate enough to make generalization.

Oboniye (2013) examines the role of small industries in rural development in Edo State Nigeria. The study adopted a mix method and data were collected through questionnaires and interview. A total of 105 questionnaires was administered to 105 respondents and 105 was retrieved accounting for 100 percent rate of return and descriptive statistics was used in analyzing the data majority of the SMEs are one-man business with a response rate of 90.48 percent, and majority of those who manage SMEs in Edo State pass through apprenticeship with 23.81 percent and most of them have low level of education WASC/SSCE 33 percent. The study further found that, the age of business ranges from one to five years, while the age for those from 5 to 10 years was 43.81 percent. This finding shows a weak educational background. The study suggests that, the government

have a greater role to play in revolving fund accessibility as attested by 20 percent respondents.

In the same vein, Mantino (2013) assessed the likely changes that takes place in EU rural development policy beyond 2013 and its implication for various national context. The study focused on the changes that occurs to EU rural development programs after 2013 and the inherent implications to a couple of EU countries. The study adopted a case comprising countries like Italy, Spain, and France. The result obtained from the case study analysis indicates that, the success or failure of the CAP policy was predicated on the type of transaction cost and incentive system that were used within the program system. The study also contends that, transaction cost and incentive system have significant impact on rural development. The study argues that, for the rural development effort to thrive, future policy should be based on alliance and cooperation at local, regional and national level. This study has added to literature on rural development but using three countries as sample was not enough as EU comprises of 27 countries in its union.

From the literature highlighted it was evident that rural development is a broad topic that can be view from so many perspectives, however this study is focusing on poverty, employment, agricultural productivity and healthcare as the key issues in rural development that need attention (Salau,2012).

Table 2.1

Summary of Selected Previous Studies

Author/Year	Country	IV	DV	Approach	Findings
Petrick (2013)	Europe	Leadership	RD	Qualitative	Reveals that not all areas developed at the same pace even if they have

					the same number of amenities, one region may over take another due to leadership variation.
Pollermann (2013)	Germany	Leadership	Rural development	Qualitative	The study found a positive result on quality of cooperation and communication within the local action group in relation to rural development
Das (2015)	India	CRS	Rural development	Qualitative	The study found that CSR impacted positively on the lives on their business and all aspects of human endeavor.
Adegboyega (2011)	Nigeria	CRS	Rural and agricultural development	Qualitative	The study reveals that Social responsibility has a great impact on the society by adding to the infrastructures and development of the society.
Oguntade	Nigeria	CRS	Rural development	Qualitative	The study found positive relationship between CSR and rural development

Table 2.1 continued

Pokorny (2013)	**Brazil**	**Policy**	**Rural development**	**Qualitative**	The study found that past policies on rural development were mainly oriented toward large scale investment, global market, and qualified entrepreneurship which does not tally with the reality in the rural areas as what the rural people need is small scale capital.
Kilkenny (2007)	USA	policy	Rural development	Analytical	The study found that policy has a positive impact on rural development
Nwankwoala (2011)	Nigeria	Policy	Infrastructure	Analytical	The found that improved rural water supply generally is not limited to improved health rather to the rural community.
Mikus (2012)	Croatia	Policy	Rural development	Quantitative	The study reveals that sound policy has positive impact on rural development

Varga (2013)	Vozokany	Land	Rural development	Case study	The study found a positive Impact of land consolidation on rural development
Rajovic (2015)	Montenegro	Land	Rural development	Qualitative	The study found that Land utilization promote rural development in Montenegro by encouraging sustainable growth and employment opportunities, especially for young employees.
Mondal (2012)	India	Micro-credit	Rural development	Survey	The study found that microcredit and microfinancing lead to the growth of the microentrepreneur class in both rural and urban areas.
Yadav (2014)	India	Microfinance	Rural development	Qualitative	The study found that microfinance programs has the ability of improving the standard of living of the rural people

Table 2.1 continued

Lo (2012)	**Malaysia**	**Tourism**	**Rural development**	**Survey**	The findings suggested that the tourism industry has created a significant impact on the cultural aspect of local communities.
Jaafar (2015)	Malaysia	Tourism	Rural development	Quantitative	Findings from the study reveals that tourism activities have significantly enhance the quality of life of the rural people through improved income from the tourism activities
Piket (2013)	EU	Tourism	Rural development	Qualitative	findings of this study indicate that cycle tourism like other mainstream tourism spend equal amount of money on daily basis which contributes significantly to the rural economy and by extension stimulate rural development
Fujita (2008)		Nature resources	Rural development	Survey	The study shows the varying impacts of the allocation policy on local resource use and

					household livelihoods in different villages.
Adenipekun (2013)	Nigeria	Natural resources	Protection of environment & Socio-economic development	Analytical	
Timothy (2013)	Nigeria	Agriculture	Rural development	Qualitative	The study reveals that various efforts at promoting investment and export diversification in the agricultural sector have not yielded appreciable dividend due to due to a host of constraining factors such as inadequate infrastructure
Paw (2014)	Nigeria	Agribusiness	Rural development	Qualitative	The study identifies poor policy articulations, shortage of working capital, poor infrastructure lack of ideology as major obstacles to effective agribusiness.

Table 2.1 continued

Kasimis (2013)	**Greece**	**Agriculture**	**Rural development**	**Qualitative**	The study argues that the de-agriculturalization and rural restructuring process had helped in transforming the rural areas into a new rurality characterized by agricultural contradiction and construction, enhance tourism, and increase in employment, and the restructuring of family labor.
Anteyski (2012)	Serbia	Agriculture	Rural development	Qualitative	The study argues that EU policy had provided the local people of Serbia with opportunity for market, but it depends on how productive and qualitative the product is.
Cemic	Slovenia	Agriculture	Rural development	Case study	The findings show that rural development programs in Slovenia was significantly determined by gender equality, rather the

					programs were based on economic capacity and demographical factors
Nchuchuwe (2012)	Nigeria	Agriculture	Rural development	Qualitative	The study concludes that rural development is dependent upon improved agriculture
Idoma (2013)	Nigeria	Self-reliance	Rural development	Analytical	The study reveals that Self-reliance as an alternative to the western model if properly understood and applied can bring hope for a brighter and more sustainable future.

Table 2.1 continued

Oino (2014)	**Kenya**	**Women**	**Rural development**	**Survey**	The study concludes that if given opportunity, women have the potential to change their own socio-economic status as well as that of the communities in which they live in because women groups act as an effective instrument for rural development
Paul (2011)	Nigeria	Infrastructure	Migration	Case study	The found of infrastructure particularly in rural areas to related to economic growth and development
Abiodun (2014)	Nigeria	Infrastructure	Cassava production	Survey	The findings show that shows that the under-development of infrastructural facilities observed in the study area is capable of jeopardizing efforts at improving the productivity of cassava-based farmers

Modupe (2012)	Nigeria	Growth of economy	Expenditure	Survey	Results showed a long run relationship between the growth of the economy and government expenditures in education, environment and housing, health services, water resources, inflation rate, agriculture, security, transport and communication.
Kalugina (2014)	India	Human potential	Rural development	Qualitative	The study conclude that concludes that the lack of resources for human development makes illusory hopes for breakthrough innovation in the development of the agro-food complex in rural areas.

Table 2.1 continued

Ristić	**Serbia**	**Strategic management**	**Rural development**	**Empirical survey**	The study contends that the efforts towards sustainable rural development must include significant investments in education
Preda (2014)	India	Education	Rural development	Qualitative	The study found that educational level is significantly related to rural development
Olagunju (2014)	Nigeria	Road	Rural development	Analytical	The result of the analysis showed that the state of road infrastructure in the study area is only about 12 percent of the roads that were tarred
Asemah (2013)	Nigeria	Radio	Rural development	Qualitative	The study found that radio plays a very significant role in the development of the rural and urban areas of any society.
Volk (2014)	Slovenia	Local group	Rural development	Survey	The study reveals that the perception of the local government board members on the suitability of rural development co-

					financing has been positively correlated with informal system of local government performance
Oboniye (2013)	Nigeria	Small scale industries	Rural development	Qualitative	The result also reveals that small scale industries has positively impacted on the lives of the rural people in terms employment and income for the household
Momodu,	Nigeria	Rural libraries	Rural development	Qualitative	The study contends that information dissemination has been universally accepted as an essential developmental tool and a basic resource upon which the improvement in living condition of populations is anchored.

2.7 Education Infrastructure

The term education infrastructure is a broad concept that encompasses all educational facilities that facilitate the running of an education system of a nation. Broadly speaking, education infrastructure refers to, a network of assets, or related parts, that function such as physical components, human resources, operational processes and organizational structure which are required to facilitate educational outcome (Gershberg, 2014). Musa (2012) conceptualized education infrastructure to mean school building for both primary, secondary and tertiary institutions. Ifenkwu (2013) defines education infrastructure generally to comprise human resource, and physical facilities on the grounds which facilitate learning. According to Aluede (2012), education infrastructure refers to all the facilities that facilitate learning, such as the school building, library, electricity, water point, toilet, workshop, furniture, playing ground, as well as the teachers. It refers to those resources, both material and human, that enable learning to take place. From these myriads

of definitions, we can understand that education infrastructure is broad in meaning, as it is termed as an enabler that allows learning to take, comprising both human and material resources. However, to fully understand the concept of education infrastructure, it is crucial for this study to explore the reports by scholars on the importance of education infrastructure to rural as well as national development. This definition extends to include a framework within which government policies are formulate for educational development both at national and local level.

Thus, as for this study, education infrastructure refers to secondary schools. Secondary school was chosen over and above the other levels of education, because secondary school education has a tripartite function, firstly, it prepares individuals for personal development, secondly, it prepares individuals for employment, and thirdly, it prepares individuals for higher education (Obanya, 2003). Additionally, much emphasis has been placed on primary and tertiary level of education to the neglect of the secondary school education. Moreover, education infrastructure was chosen because of its multiplier effect on overall development, because education has been conceived as s a general development mechanism that can touch every aspect of human life.

Consequently, the term secondary school refers to the stage of education that is between the primary and tertiary levels (Abdullah 2014). Hence, the destiny of a nation and that of the individual is shaped in the classroom through education which is the process of human capital development that involves transmission of knowledge, skills, and values to ensure proper intellectual growth and character building for self-reliance of the individual and overall national transformation.

2.8 Previous study on education infrastructure and NGOs in relation to rural development (poverty, employment, agricultural productivity and healthcare)

This section discusses on education infrastructure independent variable (IV), and NGO moderator (MV) in relation to rural development (poverty, employment, agriculture, healthcare) dependent variable (DV). Based on the literature review under this section hypotheses were postulated. Study on the role of education on rural development is scanty in Africa, as most study on rural development were conducted in Western and Asian context. This has leads to absence of literature on the role of education in rural development which could have help in forming a sound model of rural development. However, this study has tried in synthesizing previous study on education in relation to rural development which encompasses poverty, employment, agricultural productivity and healthcare.

2.8.1 Education infrastructure in relation to poverty

Awan (2011) examined the impact of education on poverty reduction in Pakistan. The aim of the survey was to assess the effect of education on unpaid family work, wage-earning, experience, gender, and different level of education as the determinant of poverty in Pakistan. The study adopted a qualitative approach and the data was generated through a household integrated survey from the year 1998 to 1999, and the data was analyzed through logistic regression analysis. The study found that, status of education and experience were negatively related to poverty between the year 1998 and 1999. The study further reveals that, educational level was negatively related to poverty reduction, as a higher level of education tends to reduce the level poverty, as well as the chances of being poor, and for the female education, it tends to help them remain above poverty level by 54.8 and 99.1 percent.

The study further reveals that, educational level tends to enlarge the chances of having some enhanced earnings, which in turn, enhances the potentials of individuals in escaping poverty. However, the study suggests that to combat poverty government should provide more schools in the rural areas as well as creating a conducive environment where an individual can optimize his full potential in educational attainment since as the more educated an individual is, is more the likelihood of escaping poverty. Absent of exact sampling techniques used in drawing the sample was one of the limitations of this study.

Similarly, Pervez (2014) assessed the impact of education on poverty reduction in Pakistan. The study adopted Augmented Dickey-Fuller (ADF) approach, and the sdata were obtained from the Pakistan Bureau of Statistics, which was extracted from 34 Time Series annual observation and the data was analyzed through Causality and Johansen Co-Integration method. The study found that, education played a key role in economic growth and helped in minimizing the effect of poverty by enhancing the social and economic condition of individual and the society as well. The study further reveals that, there was an effective connection and causal relationship between education and poverty, also the study reveals that, education has the capacity of eradicating poverty in the long and short-term period. The study suggests that, government should prioritize both the long term and short-term solution to poverty. The shortcomings of this study were its lack of exact sampling techniques that was used in drawing the sample for the study, also the data used by the study is not adequate to make a generalization.

Commonly, Njong (2010) examines the effect of educational attainment on poverty reduction in Cameroon. The study adopted a qualitative method and the data used for the

study was obtained from Cameroonian household survey of 2001, and logistic statistics was utilized in analyzing the data. The findings from the study reveals that, educational level and experience reduce the probability of being poor, and male educational level tends toward more of poverty reduction than that of the female as indicated by the statistical output. The study suggests that, to reduce the menace of poverty in the rural areas, especially among women, accessibility and affordability must be improved. This study has contributed to the literature on poverty reduction in the rural areas in relation to education. However, the study was not without its limitation, among which was the lack of adequate sample to allow generalization.

Equally, Oladapo (2013) examines the impact of education on economic growth and poverty reduction in Nigeria. The study adopted qualitative method approach, and the data for the study were obtained from Time Series ranging from 1981 to 2010, and multivariate regression was utilized for data analysis. The findings of the study reveal that, investment in education did not translate to poverty reduction. However, this was contrary to most studies and the possible reason for this inconsistency could be attributed to the quality of education that is being offered. The study further found that 1 percent increase in economic growth leads to a decrease in poverty by 1.29 percent. The study suggests that, in order to break the vicious circle of poverty in Nigeria, especially among the rural population, the quality of education provided must be improved upon and the curriculum should be fashioned in such a way that innovation and invention forms the cardinal foundation of the curriculum in order to transform the country and compete with other advanced societies. The study also recommends that, the funding for the educational sector must be increased in order to stimulate the economy through improved skills and

innovation, which are necessary for growth and development. The study recommends that, future research should investigate the effect of unemployment on poverty incidence with a view to establishing a relationship between poverty and unemployment. This study has contributed to the literature on poverty reduction specifically, in relation to education. However, the study was not without limitation, among which was lack of enough sample that will allow for generalization.

Relatedly, Julius (2011) examines the relationships between education and poverty in Kenya. The study adopted qualitative method, and the data for the study were obtained from eight provinces in Kenya and were analyzed through Pearson Moment Correlation. The findings of the study reveal that, province with low rate of poverty are those that has high rate of illiteracy as indicated by the findings, central province record 30.4 percent of poverty rate, and Nairobi 29.5 percent, while those province with high rate of poverty has low level of literacy and poor performance in academics. The study further contends that, poor people were denied access to quality education, good nutrition, and good healthcare services. The study then suggests that, government should introduce school feeding program, subsidize writing and reading materials, and uniforms, as well as addressing the problem of school expenses of the poor people. This study has contributed to the literature on poverty reduction in relation to education, however the study was not without its limitation as it lacks sufficient sample to allow for generalization.

In a similar study, Janjua (2011) explores the role of education and income on poverty alleviation through a cross-countries analysis. The study focused on the role of education and income in the fight against poverty in 40 countries. The study adopted a qualitative

method, and the data for the study was obtained from 40 developing countries from 1999 to 2007 and was analyzed through Generalize Least Square (GLS) techniques. The findings of the study reveal that, increase in income (per capita income) plays a moderately positive role in reducing the level of poverty, while income distribution did not seem to play a significant role in reducing poverty in countries with high per capital income. The study further found that, secondary school education was the key contributor in the drive towards poverty reduction. The study suggests that countries with high per capita income should concentrate on how to distribute their wealth fairly in order to reduce poverty level, while countries with low per capita income should focus more on promoting secondary school education as a mechanism for poverty reduction in their countries. This study has contributed to the literature on poverty reduction in relation to education, however, there is need to carry out further study to ascertain the validity of this findings, as it can serve as a basis for tackling poverty and inequality in modern societies.

Similarly, Afzal (2012) studied the relationship between education, poverty, and economic growth in Pakistan. The study adopted qualitative approach, and the data for the study was obtained from Time Series which ranged between from 1971 and 2010. The data were analyzed through Toda-Yamamoto Augmented Grangar's Causality (TYAGC). The findings of the study reveal that, there was positive and significant relationship between physical capital and economic growth in the long-run and short run. But while education was found to affect economic growth positively and significantly, and poverty and economic growth were found to be inversely significant. The study further confirms the existence of bi-directional causality relationship between education and economic growth, between economic growth and poverty, and between education and poverty. This

study further suggests the adoption of a model of poverty reduction using education as a strategy, to accelerate poverty eradication and economic growth and development in the rural areas. This study has contributed to the literature on poverty reduction in relation to education.

In a similar study, Khorshi, (2009) examines the role of women education in the fight against poverty in Bangladesh. The study adopted qualitative Hermeneutic approach and the data for the study was obtained through the secondary source. The key findings of the study reveal that, education brings people out of poverty, and educated mothers takes care of their children better than the illiterate, and rural women are less educated than urban women. The study also found that, ill health women affect the health of the whole household, and that the higher the size of a household the higher the probability of being poor, and health education helps women to have a prosperous family. The study suggests that, since women were related directly and indirectly to poverty, health education for women should be given priority, and effort should be made to encourage female to enroll in school and should be made a policy. This study has contributed to the literature on poverty reduction in relation to women health education, however the study cannot be generalized due to lack of sufficient sample. However, future study should be conducted quantitatively to supplement the qualitative study.

Equally, Thapa (2015) examines the relationship between education and poverty in Nepal. The study adopted survey approach and the secondary data that was used for the study was obtained from Central Bureau of Statistics, Nepal, from 1995 to 2011. The data was analyzed using descriptive statistics. Findings from the study reveal, a negative

relationship between educational attainment and household income (poverty), and a positive relationship exist between private school student and income level, as income level increases the percentage of enrolment for private school also increases, similarly, there was negative relationship between government school student and income level as income level increases the percentage of government enrolment decreases. Further findings reveal, the existence of inverse relationship between school enrolment rate and poverty, as poverty rate decreases, the enrolment rate increases, and consumption level also increases at the national level. This implies that, years of schooling was positively related to consumption. The study suggests that since education is the cornerstone of developmental process, as it afford the basic for the enhancement of the social and economic condition of a nation, more attention should be given to the educational sector so as to fast-track the development. This study has contributed to the literature on poverty reduction in relation education, however, the study was not without its own limitation among which was the study fails to mention the exact sample that was used for the study and for this reason the findings cannot be relied upon outside the scope of the study , and its lack of sufficient sample does not allow generalization. Future study should be conducted by adopting mix method quantitative and qualitative.

In a similar study, Chege (2015) examines the missing link between education and poverty alleviation in Kenya. The study adopted conceptual approach, and the secondary data that was used for the study was obtained from government report and analytical method of data analysis was used. The study contends that, education is a vital instrument for development as its act as a means or an end to the transformation of a nation. The study further contends that, educational intervention is mostly aimed at tackling poverty,

illiteracy, hunger, and malnutrition, which are pivotal to the development processes and realization of the millennium development goal. The study suggests that, for education to be an effective mechanism for development in helping to alleviate poverty and stimulate national development, the educational system must be reform to conform to the current situation through the develoment of modern curriculum that will cater for the individual as well as the societal needs in terms of capacity building and skills acquisition. This study has contributed to the literature on poverty reduction in relation education, however being a conceptual approach, the study lacks the strength for generalization. Future study should be conducted by adopting mix method quantitative and qualitative.

In the same vein, Wanka (2014) examines the impact of educational level on poverty in South Africa by assessing the missing link between education and poverty. A secondary source of data collection was adopted for the study, using an analytical method of data analysis. The results obtained revealed that, the probability of associating high prevalence of poverty among household with low level of education is very high, the result also indicated that, there is the likelihood for household with primary education to be poor than those household with higher level of education. The study further revealed that, even though the education sector has received substantial allocation over the recent years, that has not translated into improve education outcome in Limpopo Province. This study has contributed to the literature on poverty reduction in relation education, however, it lacks the strength for generalization.

Equally, Arias (2016) examined the impact of education on poverty reduction in Costa Rica Republic. The study adopted Time Series approach, using secondary data obtained

from population census of 2011. The study found that, a substantial number of people have been helped by the means of education to escape poverty, both from the rural and urban areas. The study further found that, individuals who have completed their secondary school education, and are leaving in urban area, tends to escape poverty of shelter by 36 percent, access to knowledge by 48 percent, and access to goods and services by 22 percent. On the other hand, individuals who have completed secondary school education and leaves in the rural areas, tends to escape poverty of shelter by 18 percent, access to knowledge by 30 percent, and consumption by 32 percent. The study contends that education has proven to be a viable mechanism for social mobility and for poverty reduction in most developing countries in the world. The study suggests that, for education to be more effective in combating poverty and speed up rural development, more emphasis should be placed on quality education, as this would equip individuals with the necessary skills and knowledge required for any kind of human development. This study has contributed to the literature on poverty reduction in relation to education, however there was need for a mix method to supplement the findings of this study for possible generalization.

In a similar study, Odior (2014) assessed the effect of government expenditure on education and poverty reduction in relation to achieving MGDs in Nigeria. The study adopted a simulation approach, and data were collected from Social Accounting Matrix (SAM), CBN, and NBS, and the data were analyzed through Computable General Equilibrium (CGE). The findings from the analysis shows that, Nigeria will not be able to achieve the MGDs in the areas of poverty reduction and education by the year 2015. The study also reveals the existence of direct relationship between government spending and

education, as an increase in government spending on education is vital for achieving economic growth and poverty reduction in Nigeria. The study argued that, for government to achieve economic growth and a substantial reduction in poverty level, government policy must be pro-poor, and education is one of the pro-poor policy for enhancing human development and this by extension will reduce poverty. This study has contributed to rural development literature from a poverty reduction perspective, however, future study should be conducted qualitatively and quantitatively to supplement the present study for generalization.

Equally, Khan (2016) examined the role of human capital on poverty reduction and explored the basic link between human capital and poverty reduction in Kakak district of Pakistan. The study adopted survey approach, and 150 questionnaires were administered to respondents in two villages Kakak and Banda. Out of these questionnaires, 90 were retuned, accounting for 60 percent response rate. Logistic regression analysis was used in analyzing the data, and the result of the analysis shows that Tehsil Takh-e-Nasrati has 34.3 percent literacy rate, Kakak 34.2 percent, and Daud Shah Tehsil 23.5 percent. The urban literacy rate is 21.7 percent, while that of the rural is 78.3 percent. Overall, the total literacy rate for male is 80.4 percent, and that of female is 19.6 percent, while in the rural areas the literacy rate for male is 16.9 percent, and for the female is 4.8 percent.

Furthermore, the study reveals that the rate of poverty in Banda Daud Shah Tehsil was 58.5 percent, while that of Tehsil Takh-e- Nasrati is 42.4 percent. Poverty in the urban area stands at 34 percent, in rural area 47.1. In Kakak, the total poverty rate was 53.5 percent out of which, 56.52 percent of the population resides in the urban area. However,

the study shows that, at all levels of primary, intermediate, bachelor, and masters, education is negatively related to poverty, except for the middle level, as a rise in educational attainment, decreases the probability of being poor.

Additionally, the findings reveal that households with master's degree has a wider chance of earning more income, while matriculation level has more significant on poverty reduction than intermediate level, and an increase in experience increases the chances of higher income earnings and getting away from poverty. The study reveals that, male has more opportunities in terms of higher income, than their female counterpart. The study suggests that, for government to achieve meaningful development especially in the rural areas and which by extension a reduction in poverty, government policy must be pro-poor. Education is one of the pro-poor government policies for enhancing human development and thereby enhancing the chances of getting out of poverty. This study has contributed to rural development literature from a poverty reduction perspective, however, future study should be conducted qualitatively to supplement the present study.

Similarly, Akhtar (2017) examined the factors that influence poverty reduction and its economic variables in Pakistan. The study adopted a Time Series approach, and the data for the study was sourced from Bureau of Statistics and Johansen Co-Integration Techniques was used as tool for analysis. The result from the analysis, found a long run relationship between poverty, education, domestic credit to private sector, military expenditure, FDI and agriculture. The result also reveals that, all these variables have negative significant impact on poverty except, military expenditure. Furthermore, the study reveals that, education enrolment has a negative relationship with poverty, as

education enrolment increases, poverty headcount index tends to decrease proportionately, in the long run. Furthermore, the study found that, education can be considered as the solution to a lot of problems faced by the low-income countries. Thus, the effect of education enrolment has, in the long run, been recognized as a vital mechanism for national and rural development. The study opines that, since education is vital for providing quality life to the individuals and the society, government should, as a matter of urgency provide quality education to the citizenry to achieve the desire development objectives. This study has indeed contributed to literature on rural development from the perspective of poverty reduction. However, the study did not mention the span of time within which the data was used, and this could affect the strength of the study for making generalization.

Furthermore, Uddin (2013) examined the effect of vocational and technical education in poverty reduction among Nigerian youth. The study adopted descriptive survey approach, and the data for the study was obtained from primary source. A total of 150 respondents were used as the sample for the study, and the data was analyzed by using mean score threshold of 2.50 as the critical point. The result from the descriptive analysis shows, the existence of positive impact of vocational and technical education on poverty reduction among youth in the study area. Also, the study reveals that, technical and vocational education helps individual in acquiring skills that can helps them gain employment thereby reducing their level of poverty. The study suggests that, government should put on a mechanism for job creation through the development of vocational and technical education. This study has contributed to rural development literature from a poverty

reduction perspective, however, the study did not explain how the sample was arrived at which limit the strength of the study for making generalization.

In the vein, Nowak (2016) assessed the long run impact of education on economic growth of Nepal. The study adopted a Time Series approach, and the data for the study was sourced from World Bank database from the period between 1995 and 2013. Ordinary Least Square (OLS) was used as a tool for analyzing the data. The result from the analysis shows that, there was a significant relationship between basic education, tertiary, and economic development. Also, the study reveals that, all tiers of education have a positive and significant impact on the national economy on the long run basis.

Additionally, the study reveals that an increase in enrolment by 1 percent leads to an increase in GDP by 39.17. For secondary schools its 71.36 percent, and for tertiary education, 11.43 percent. The study suggests that, government should put on a mechanism for curtailing school dropout as was one of the major problems facing educational attainment. This study has contributed to rural development literature from education perspective in relation to economic development.

Equally, Grech (2017) examined the relationship between disability, poverty, education and perceived barriers in Guatemala. Specifically, the study assesses the impact of disability on the education of physically impaired adult. A qualitative ethnography method of research was adopted for the study, and the data for the study was sourced through interviewing involving 25 adults, 15 men, and 10 women. The sampled respondents were drawn through the purposive sampling technique from a sampling frame of disabled local association. The data obtained were transcribed and analyzed using thematic analysis

techniques. The result from the analysis shows that, lack of mobility, family poor background, distance from the school, cost of uniform, extreme weather condition, and other cost associated with schooling, were some of the barriers to education among the physically impaired adult. The study further found that, educational attainment does not automatically provide better job opportunities or getting out of poverty in areas where chronic poverty exists and where there is scarcity of paid labor. This study contributed to the rural development literature from education perspective in the area of disability. However, one of the limitation of this study was that, it was translated from Spanish to English and as such, there were a lot of problems in the sentence structure, and also, the sample used was not adequate enough for generalization.

Consistent with the study of Chege (2015) and Julius (2011), MacDougall (2013) who examined the effect of education on poverty in Kenya. The study focused on assessing the impact of education on poverty in Kenya. The study adopted survey approach, and 13,430 household were selected through random sampling techniques to serve as the sample for the study, and a descriptive statistics technique was used in analyzing the data. The result from the analysis shows that, the correlation between female literacy and poverty was stronger than the correlation between male and poverty. The study suggests that, programs for promoting enrolment in school should be inclined towards retention and completion. This study has contributed to rural development literature from education perspective in relation to poverty.

Equally, Ezeji (2015) examined the significant role of business education as a tool for poverty alleviation in Enugu Nigeria. The study adopted survey approach, and draws its

sample from the population of students from higher institutions of learning in Enugu state, which include University of Nigeria Nsukka, Enugu State University of Technology, Federal College of Education, College of Education Technical, Renaissance University, Agbani, Institute of Ecumenical Education. A total of 93 questionnaire were distributed to the respondents and all the 93 questionnaires were retuned accounting for 100 percent rate of return. A descriptive statistics technique was used as a tool for analyzing the obtained data, using the mean level as a determinant of the level of acceptance or rejection. The result from the analysis shows that, business education is a tool for poverty alleviation through acquisition of skills and knowledge which allows individual to be a productive wage earner and helps them in escaping from poverty.

In a similar research conducted by Lohana (2011), it was found that, the head of a household that remains poor all through, had the lowest level of education by 1 year on the average, and had the least increase over the same period, whereas the head of households that escaped poverty, had a higher level of education by 1.8 year, and had an increase of 2 years over the same period.

Additionally, findings by Baulch and Dat (2011) in Vietnam, reveals that getting lower secondary school education qualifications has a positive impact on individual's chances of being employed, and it enhances ones' condition of living. It was also found in the study that, in a household, where the heads had lower secondary education, they are more likely to be 24 percent richer between the periods of 2002 and 2006, compared to household heads with no schooling, and whose percentage was 31 percent higher than household with high school education.

In rural Nicaragua, as revealed in a study conducted by Stampani and Davis (2006), the rate of chronic poverty of households that does not have an educated adult was 22 percent, 7 percent for those households with adult that had attained 3 years of schooling. However, only 1 percent was found for household with adult that has attained six years of schooling.

Similarly, according to Arndt (2012) and Seth (2014), the prevalence of poverty in the world makes it importance for policy makers to consider education as a panacea to the problem of poverty. This is because studies have shown that with the help of education, the rate of poverty had reduced among people living on less than $1.25 per day from 47 percent in 1990 to 22 percent in 2012.

The relationship between education attainment and poverty reduction has received a couple of researcher's attentions, where most of the finding's indication a negative but significant relationship, therefore based on the empirical findings from the above literatures reviewed, this study hypothesized that:

H1a: There is significance relationship between Education infrastructure and poverty reduction

2.8.2 Education infrastructure in relation to employment

Mirica (2014) examined the role of higher education in curbing unemployment rate in Romania. The study adopted a case study approach, and Romania was selected as the case study area. The data for the study was sourced from Romanian Bureau of Statistics and descriptive statistical technique of analysis was used for the study. The findings from the study indicates that, over 30 percent of EU population aged between 20 to 24 years

are students and over 60 percent aged 30 to 34 were higher school graduates. The result from the analysis further shows that, the long-term relationship between higher level of education and employment was significant, as an increase in the level of education corresponds to a decrease in unemployment rate in Romania. The study further found that, with additional increase in the total number of high school graduates, the unemployment rate decreases. This study has contributed to rural development literature from education perspective, however, the sample used for study was not adequate enough to allow for generalization outside the scope of the study. The study suggests that, policy makers should be cautious, especially, when making policy on mass education so as to preserve and maintain the quality and sustainability of education.

Similarly, Lavrinovicha (2015) examined the role of education in determining the unemployment rate in Latvia. The study uses a case study approach, and selected university of Latvia as its case study area. A descriptive statistics technique was used as the tool for data analysis. The result from the analyzed data shows, a significant of 0.001 between higher level of education and employment. This result signifies the power of education as the higher the level of education increases the chances of being gainfully employed also increases. The study further found a connection between education and income of household, which was also significant at 0.01, an increase in the level of education lead to an increase in income level by 26 percent in 2002, and 70 percent in 2013. This study has also contributed to rural development literature from the educational perspective. However, the sample of the study was not adequate enough to make a generalization outside the scope of the study.

Furthermore, Riddell (2011) examined the effects of education on unemployment and re-employment in the USA. Using a Time Series approach, the data for the study was sourced from the Census Bureau of Statistics, USA. Findings from the OLS and descriptive statistics shows that, education has a significant positive impact on re-employment rate. Additionally, the findings reveal that, an increase in secondary school attainment does not translate to changes in unemployment rate, and that additional secondary schooling does not influence re-employment of the unemployed.

Consequently, this study reveals that from the data of 1980 census, the completion of high school rates increases the probability of being re-employ by 40 percent, and an addition year spent in secondary school, increases this chance by 4.7 percent. Consistent with some of the above findings, this study has contributed to rural development literature from education perspective. Like others, of its kind, the sample used for the study is inadequate to allow for generalization outside the scope of the study. In line with the contention of human capital theorist views of education as an investment, which is capable of enhancing individual's ability to make sound decision in difficult situation, this study has justified this assertion and as a result of this, policy makers should pay more attention to education as a viable means for sustainable development of both individuals and society.

Similar to the studies of MacDougall (2013) and Chege (2015) on education and poverty in Kenya, Elima (2015) examined the effect of educational attainment on employment in Kenya. The study adopted a Time Series approach and sourced its data from the Kenyan Integrated Household Survey. A multinomial logit model was used as its tool of analysis and findings reveals that, education is an important element in determining youth

employment, especially for those with higher education attainment. Whereas, those with low level of education finds it difficult in gaining employment. The findings also reveal that, individuals with secondary school and tertiary education were more likely to gain wage employment than those with primary or lower level of education. Similarly, individuals with secondary school education and tertiary education are not likely to engage in self-employment in the agricultural sector than those being unemployed.

Consequently, the study also found that individuals with primary school education were more likely to engage in self-employment in private businesses than those with no education, and individuals with secondary school education and tertiary were less likely to engage in private self-employment than those without education. Also, the study found that, demographic variables plays a role in determining employment as marital status, age, gender were found to affect employment of youth, females were found to be more unemployed than their married counterpart, older youth were likely to be employed than their younger youth. This study has contributed to rural development literature from education perspective, however, the sample that was used by this study was not adequate enough to make a generalization outside the scope of the study. Furthermore, the study suggests that, government should provide schools in the rural areas to speed up rural development and by extension poverty reduction through employment generation. Future study should adopt mix method qualitative and quantitative so as to come with a strong finding that will allow generalization.

Consistent with the study of Elima (2015) in Kenya, Applegate (2014) examined the relationship between education and unemployment in the USA. The study adopted a Time

Series approach, and the data was sourced from the US Bureau of Statistics from 2006, 2009, and 2012 and the data was analyzed using regression analysis tool. The analysis from the study shows that, there was significant negative relationship between individuals with diploma from high school, individuals with bachelor's degree or higher, and unemployment rates during years of the recession. The study further found that, there was no significant correlation between individuals with bachelor's degree or higher education and unemployment rate. In addition to this, the study reveals a significant correlation between individuals with high school diploma and unemployment rate, but there was no significant correlation between individuals with associated degree or high school diploma, and unemployment rate, this finding implies that, people with higher qualification were not affected by the recession. The study suggests that, government should provide schools in the rural areas so as to speed up rural development, and by extension, this would result in poverty reduction and employment generation. However, the study suggests an adoption of mix methods of qualitative and quantitative in future study so as to come with a strong finding that will allow generalization.

Similar, to the study of Elima (2015) and Riddell (2011), Garrouste (2010) examined the role of the education on long-term unemployment. The study adopted a Time Series approach by using a sample drawn from 11 EU countries. A combination of Binary Logit and Probit Models, the study found that, the probability of individuals with higher educational attainment remaining in long-term unemployment decreases, and also, gender, experience, and types of jobs, have statistical significance across the level of education in determining the level of unemployment. Additionally, findings reveal that, even though, educational attainment has a significant effect on ages, its effect decreases

as individual reaches 40 years of age, while experience has same effect as educational level. Furthermore, the study reveals that, female has a high probability of remaining in job than their male counterpart, except for those who are close to their period of retirement. Consequently, the study shows that younger workers from ages 20 to 30 and older ones, from 50 to 65 years of age tends to benefit more from the negative statistically significant correlation between long-term unemployment and RCI. Also, the employees' health status appears to be significant in determining the unemployment rate of the medium-skill workers. As for the urbanism, it is significance for low and medium skilled, but not for high skilled workers. Although, this study has made a contribution to the literature in employment in relation to educational attainment, however, the study was not without limitation one of which was the failure of the study to state the exact sample used for the study, and the type of sampling techniques adopted. However, the study suggests that government in the EU should provide schools, especially in the rural areas to speed up rural development, which would by extension, result in poverty reduction and employment retention. Future study should adopt mix methods of qualitative and quantitative to come with strong findings that will allow generalization outside the scope of the study.

Behrman (2010) conducted a study in order to examine whether parent educational attainment has an impact on child. The study found a positive relationship between parents and child education. This finding indicates that, a mother's level of education and other skills, such as cognition, directly determines the continue schooling of her child, and every attainment of women's educational level, enhances the chances of the child being paid higher once they become adult. Also, their mastery in reading comprehension from 14

points increases their wages by 36 percent. In another study by Lambert (2011) in Senegal, it was found that parent's education is more likely to help children in gaining employment and getting out of poverty by 27 percent than inheriting house or piece of land.

According to reports from OECD (2012), one of the easiest ways of getting peoples life out of poverty is through education. This was evidenced by a research conducted by Hunushek and Woessmann (2012). They study found a significance relationship between quality of education and poverty reduction. It was revealed that, if all pupils can have a good reading ability, then about 171 million children could be bailed out of the misery of poverty. The figure is equivalent to about 12 percent cut in the total world poverty. In a related study conducted by Wiggan (2007) using regression analysis, it was found that, the percentage population of children aged 25, with at least some college degree, have a significance positive influence on employment growth, but not on population growth.

Consequently, a study conducted by Gaddis and Klasen (2011) in Mexico found that, the proportion of those employed with primary education qualification was 30 percent among women, while this proportion was 48 percent for those with secondary education qualification.

Based on the emerging researches above, addressing the relationship between education and employment, the literature has guided this study to formulate the hypothesis for this study below:

H1b: There is significance relationship between Education infrastructure and employment

2.8.3 Education infrastructure in relation to agricultural productivity

Oduro-Ofori (2014) investigated the effect of education on agricultural productivity. The study adopted a survey approach and the data for the study was obtained from eight communities, comprising 100 respondents from the staff of the municipal agricultural development unit and non-formal education office of the municipal education directorate. The result from the analysis reveals that, educational attainment lead to increase in farm output, and those with secondary school education recorded high increase in farm output than those with lower level of education. The study further found that, extension services has higher impact on agricultural productivity than basic education.

Additionally, the study contends that education is essential for agricultural productivity as it opens farmers mind in new knowledge and techniques of farming. Also, the study reveals that, non-formal education affords farmers to gain training and new method of farming, while informal education gives the farmer the opportunities to be abreast with changing innovation and ideas that allows farmer to share ideas and experience with the outside communities. The study suggests that, factors that militate against farmers productivity, such as transportation, access to input, credit facilities, and communication, should be provided by the government. This study has contributed to the literature on education in relation to health, however, mix method approach should be conducted to strengthen the findings of this study for possible generalization.

Reimers (2013) examined the role of education on agricultural productivity in USA. The study adopted a Cross-Country Time Series approach, using panel data obtained from 95 developing and middle-income level countries, from 1961 to 2002. Regression analysis

was used in analyzing the data. The result from the analysis reveals that, education's effect on agricultural productivity was highly positive and significant. The study further found that, primary and secondary education has significant positive effect on agricultural productivity, whereas higher education has insignificant impact on agricultural productivity. The study also found that, the return to education was higher for high income countries. In addition, the study shows that, education have positive impact on agricultural productivity when there is rapid technological, change since it helps people to adjust to new opportunities as availed by the technological advancement.

Consequently, Afari (2001) examined the effect of farmer's education on farm productivity in Ghana. A Time Series approach was adopted as the method of the study, using panel data from survey from October 1998 to September 1999, covering 5,998 households, containing over 25,000 persons. The result from the analysis reveals that, the average schooling years of farmers as sampled from the GLSS 4 survey data, were below the primary level, and Weighted Least Squares estimates for cassava farm production function indicates that, household heads' education, as measured by years of formal schooling attained, had a positive but insignificant effect on the farm productivity. The study further found similar results for maize farmers, as the farm productivity level increases, ceteris paribus increases to between 0.59 percent and 1.43 percent, for cassava farmers with primary and secondary education respectively. However, the percentage increase in cassava output is as much as 3.7 for each additional year of schooling which is above the mean educational level of sampled farmers. For the maize farmers, the study also found that, at least a middle school education was found to be necessary for significant benefits and is highest for farmers with middle and post-secondary education

in the farm income estimation. However, maize output is likely to increase by 3.1 percent for one extra year of schooling at the mean educational level of the sampled farmers. Additionally, the study reveals that, extension services contacts were found not to significantly enhance productivity in any way for both cassava and maize farmers. The study suggests that, government should give more priority to investment in basic and secondary education by focusing on smallholder staple crop. This study has contributed to the literature on education and agricultural productivity relationship. However, a mix method approach should be conducted to strengthen and confirm the findings of this study.

In line with the above, Huang (2009) examined the impact of economic value of education on agriculture of selected East Asian countries. The study focusses on assessing the impact of economic value of education on agricultural productivity in some Asian countries. The study adopted a Cross-Country Time Series approach, using panel data from 7 developing and middle-income countries between 1961 and 2001. A switch regressing analysis was used in analyzing the data. The result from the analysis reveals that, there was a plausible variation in education ratio, which could not be explain due to the nature of countries' deteriorating condition in the early take up. The study further found that, for those countries who experience improvement in agricultural productivity throughout the entire time span, education have been found to be the major driving force. The study also found, the existence of effect of education on agricultural productivity change. The study also reveals that, for those countries where education constitutes an essential element of the determinant of agricultural productivity growth the effect of education was found to vary from one country to another and from one regime to another regime. This study has contributed to the literature on education and agricultural

productivity relationship, however a more comprehensive study needs to be conducted to include other regions in the continent for generalization.

Similarly, Girgin (2011) examined the role of education in agricultural productivity in Turkey. Case study was the approach utilized by this study, and regression analysis was adopted as the tool for analysis. The result from the analysis reveals a positive significant relationship between VI graduate teachers and wheat production at provincial level. The study further reveals, the existence of a positive and significant relationship between VI graduate and teachers and literacy rate. The study suggests that, for governments around the world especially the low-income nations more attention should be given to education as it's the most viable mechanism for improving agricultural productivity and rural development by extension. This study has contributed to the literature on education and agricultural productivity relationship. However, more project needs to have been included in the case study to make the findings more comprehensive for generalization outside Turkey.

Consequently, Ferreira (2015) examined the relationship between education and agricultural productivity in Malawi. A survey approach was adopted for the study and regression analysis tool was utilized. The result of the analysis reveals a positive significant relationship between education and agricultural productivity, especially in maize production and all other product. This is consistent with the findings of Afari (2001) in Ghana, where educational attainment of the maize farmers has positive effect on the productivity level of maize production. Consequently, the study reveals the existence of a positive and significant relationship between education and earnings. The study stresses

on the need by the government to pay more attention to education as the most viable mechanism for improving agricultural productivity and by extension, rural development. This study has contributed to the literature on education and agricultural productivity relationship, however, more project needs to have been included in the case study to make the findings more comprehensive for generalization outside Malawi

In a similar study, Yasmeen (2011) examined the impact of education on farmer's agricultural productivity. A survey approach was adopted, using the OLS regression analysis as the tool of analysis. The result from the analysis reveals a positive significant relationship between education and agricultural productivity in all agricultural product. This is also consistent with the findings of Ferreira (2015) in Malawi and Afari (2001) in Ghana. The study further found that, literate farmers tends to use new farming techniques and fertilizers than the illiterate ones. However, the study concluded with a suggestion to the governments to as, a matter of urgency, pay more attention to education as being the most viable mechanism for improving agricultural productivity and rural development. Whereas, the sample used for the study was too small for making generalization, the study has made a significant contribution to the literature on education and agricultural productivity relationship.

Similarly, Das (2012) examined the impact of farmer's educational attainment on agricultural productivity in India. With a total of 12 villages in KBK districts of Odisha being selected for the study, the Cobb-Douglas production function model of regression was utilized as tool for analysis. Findings from the analysis reveals a positive significant and continuous relationship between education and agricultural productivity. However,

the study further found that, an increase in additional year of schooling leads to additional corresponding increase in agricultural productivity. This finding is consistent with the findings of Afari (2001) where the percentage output for cassava increases with additional years of schooling also increases.

Consequently, the study suggests to the government to pay more attention to education as one of the most viable mechanism for improving agricultural productivity and by extension, rural development. Similar to the Yasmeen (2011), the study has contributed to literature on education and agricultural productivity relationship, but its sample size was too small to represent the whole of India with a population of over a billion people. Hence, future study should add more districts to make a fair representation of the entire population of rural India.

Similar, Djomo (2012) examines the effect of human capital on agricultural productivity in Cameroon. With a focus on the impact of human educational attainment on agricultural productivity, the study adopted a Time Series approach, and the data was obtained from household survey of the national institutes of statistics, and OLS regression model was utilized as the tool for analysis. The result from the analysis reveals that, additional year of experience and schooling increases agricultural productivity. The study further found that, an additional year of experience reduces the level of inefficiency, the study further found that, an additional year of schooling and experience increase farmer's income. This finding is in line with the study of Afari (2001) in Ghana where an additional year of schooling increases the output of cassava and maize of farmers. The study suggests that, governments as a matter of urgency should prioritize education as it's the most viable

mechanism for improving agricultural productivity and rural development by extension. This study has contributed to the literature on education and agricultural productivity relationship, however, the sample of the study was too small for generalization within or outside the scope of the study.

Similar, Ndour (2017) examined the effect of human capital on agricultural productivity in Senegal. The study adopted survey approach and stochastic frontier model simple Tobit regression was adopted as the tool of analysis. Consequently, result from the analysis found human capital to have a positive and significant effect on the farmer's productivity level. The study also revealed a significant relationship between human capital and technical efficiency. The study suggest that focus should be on education and training to meet the challenge of food insecurity.

Focusing on the impact of education on agricultural productivity, Fielke (2014) examined the importance of farmer's education in relation to agricultural productivity in Australia. The study adopted a survey approach and stochastic frontier model and Tobit regression was used as a tool of analysis. The result from the analysis shows that, higher education had positive effects on respondents' choice of priorities, risk recognition regarding their families, perceptions of future outcomes, community and the value of environmental services. The study further found that, education in general contributes to higher thinking regarding the social and environmental outcomes of individual agri-businesses actions. Furthermore, the study found that education contributes to the survey respondents' less dependent on government for economic competition and regulation, as those with a TAFE

qualification or university degrees, were found to significantly have less likelihood of reducing the import competition, input costs, or increase regulation in the industry.

Consequently, the study found that TAFE and university qualifications contribute to the farmer's likelihood of depending on the state support for the socio-environmental consequences of agricultural land use. Similarly, the study also found that, as the educational level increases, all respondent concerns surrounding government support reduced significantly. This means that farmers with higher education qualifications generally sought less economic support from the government and are not as anxious as those without qualification in seeking for any government assistance. Like in some of the reported findings above, the study has made contributions to the literature on education and agricultural productivity, but the sample the used was too small for generalization outside the scope of the study.

In the same vein, a study conducted by Klasen (2011) found that, education increases earning of farmers, which in turn, improves their well-being significantly. In another study by Tersoo (2014), it was found that farmers with numerical ability tends to interpret and respond to new information pertaining to new discovery in the field of farming, and that education has the capacity to improve the farmers productivity level through the use of modern technology, which has assists them in overcoming poverty.

Similarly, in Mozambique, it was found that literate farmers, with secondary school education, were 26 percent more likely to venture into cash crop farming, than those with primary school education as was investigated by Bandiera& Rasul, (2006).

In a similar study in Nepal, the studies have found that farmers that, had obtained a complete primary education qualification were likely to adopt to soil conservation techniques by 26 percent, and they are likely to be more conscious of taking proactive measures in preventing erosion than those with no education (Admassie, 2008).

A similar study in Nigeria, it was found that, household heads who had primary school education recorded an increase in farm output in cowpea production through the use of modern technology, but this percentage is likely to be higher when the household heads possesses secondary school education (Alene & Manyong, 2007). Similarly, findings of Mottaleb (2013) indicates a positive effect of education on farm's output and profit of farmers. Similarly, findings from Temitayo (2013) also indicates the significant effect of education on farmers, who engages on off-farm work. The on-the-farm and off-the-farm household returns on education have both indicates the efficacy of education infrastructure in enhancing the living condition of the rural dwellers, which, is the goal of rural development.

Based on the analysis of the research findings above, in which it was found that, there exists a relationship between education and agricultural productivity, this study postulates the following hypothesis:

H1d: There is significance relationship between Education infrastructure and agricultural productivity

2.8.4 Education infrastructure in relation to healthcare

Empirical studies abound both in the West and other continents that tried to establish the relationship between educational infrastructure and healthcare. Some of the outcomes of these findings are reported in the succeeding paragraphs.

Huang (2015) assessed the impact of education on healthcare in some regions of China. The study adopted a survey method and draws its sample from three largest regions of China. The data obtained from this survey were analyzed through Graphic Data Analysis. The result from the graphic analysis found that, compulsory schooling policy increases the educational level of the regions more speedily, and it also compresses the regional inequality across the country by increasing the educational attainment of poorer regions significantly. The study further found, the causal effect of education on health status among the working group by revealing that, an increase in schooling by a year reduces the tendencies of having poor health by 2 percent, 1percent for underweight, and 1.5 percent for smoking. Furthermore, the study reveals that, education enhances health status of individuals by 20 percent from 1950s to 1980s. Similarly, the result indicates that, nutrition, income and cognition explained the impact of education on health by 11-13 percent,15-20 percent, peer `effect 10-18 percent. The study suggests that, education policy can be a viable mechanism for health improvement if properly initiated and implemented effectively. However, future study should adopt mix method of qualitative and quantitative so as come up with strong findings that will allow for generalization.

Similarly, Fonseca (2011) assessed the effect of education on health across European countries. The study adopted a survey method and drawn a sample from thirteen OECD

countries, and the data was analyzed using the IV-Probit analysis. The result from the graphic analysis reveals that, one additional years of schooling leads to lower probability of poor health such as diabetes and hypertension. The study further found, causal effect of education on other health issues, such as heart disease, lung, stroke, arthritis, and psychiatric illness which are statistically insignificant. Also, more schooling leads to high rate of cancer as indicated by the models. The study suggests that, future study should investigate the relationship between education and chronic condition, which the present study could not ascertain the outcome. This study has contributed to the literature on education in relation to health, and by extension rural development. However, a mix method would have been the best approach for this type of study so that the findings can be used for continental generalization.

Consistent with the study of Fonseca (2011), Brunello (2016) investigated the causal effect of education on health by focusing on the impact of education on health. The study adopted a longitudinal survey method and the sample for the study was drawn from twelve OECD countries, and the data was analyzed through IV-Probit analysis. The result from the graphic analysis found that, 1 additional year of schooling reduces self-reported poor health by 7.1 percent for females and 3.1 percent for male. The study further found the mediating effect of drinking, smoking, and body mass behaviors accounting for 23 to 45 percent of the effect of education on health depending on the gender. The study suggests that future study should investigate the relationship between education and chronic condition which the present study could not ascertain the outcome. This study has contributed to the literature on education in relation to health and by extension rural

development, however a mix method will have been the best approach for this type of study so that the findings can be used for continental generalization.

Additionally, Cranor (2016) examined the effect of education on health in relation to students' social security benefit program. A longitudinal method of research survey was adopted for the study, the sample was drawn from the 1979 survey data of youth, where 12,686 people ages between 14 and 22 in 1979 and 1994 were interviewed. The result from the regression analysis found that, there was no empirical evidence in this study that shows the effect of education on health. However, this finding is contrary to most of the previous studies which found positive significant effect between education and health. However, this inconsistency may be due to statistical error. This study has contributed to the literature on education in relation to health and by extension rural development, however, as attested to by the researcher, the study might have some errors in the data or in its analysis, therefore, further study needs to be conducted to replicate the findings.

Similarly, Silles (2009) examined the causal effect of education on health in United Kingdom. The study adopted a longitudinal survey method and the sample was drawn from Time Series data, and TSLS was used as the tool for analysis. Findings from the analysis reveals that, there is a causal relationship between education and health status. The findings also reveal that, one additional year of schooling increases the probability of having a good health status by 4.5 and 5.5 percent point, depending on how the variables were measured.

Consequently, Buckles (2016) examined the effect of college education on mortality rate in the USA. The study adopted a longitudinal survey method, and the sample was drawn

from Time Series Data, which was sourced from 1980 to 2007 census. A regression analysis was used as the tool for analysis, and finding shows that, an increase in college level at 25th percentile to 75th percentile decreases the death rate by 10.9 to 13.4 per 1000 men, which is equal to 7.9 to 9.7 percent of the total mortality rate or about one-fourth of the total mortality. Also, the findings reveal a negative effect of college education on death emanating from cancer and heart disease by 6 per 1000 (16.6 percent), and heart diseases death by 4.4 per 1000 (12.3 percent). Further, an increase in college education leads to high earnings and high rate of insurance, while college education is associated with less smoking and more exercise. Like other studies of its kind, this study has contributed to the literature on education in relation to health and by extension rural development.

In assessing the benefit of secondary school on health of adolescent and youth adult in low, middle, and high-income countries, Viner (2017) examined the effect of secondary school education on the health of adolescent and youth adult in 186 low, middle, and high-income countries. The study adopted a longitudinal survey method and the data was obtained from Time Series from 1980 to 1990 and a longitudinal structural margin and IPW models was used as the tool for the analysis. The result from the analysis found that, each increase in secondary schooling, decreases the adult fertility rate by 8.4 percent in the mixed effect models, and 14.6 percent in the IPW models excluding primary school and GDP. Similarly, counterfactual analysis shows that, the reduction in adult fertility due to secondary school effect was 28 percent in low income countries and each additional year of secondary school reduces mortality rate by 16.9 percent for adult age between 15 to 19 years and 14.8 percent for 20 to 24 years old young women and 11.4 percent for 15 to 19 years old , and 8.8 percent for 20 to 24 year old young men in low income countries.

Conclusively, the study shows that, an additional increase in secondary school is associated with 24.5 percent and 43.1 percent reduction in HIV prevalence among young men and women. This study has contributed to the literature on education in relation to health status, however, other approach within the qualitative method such as interview will invariably enhance the findings of this study, therefore future study uses mix method of data generation and collection.

Baker (2011) examined the benefit of the social and economic investment in public schools in Pennsylvania USA. The study adopted Time Series approach, and the data for the study was obtained from government agencies. The result from the analysis shows that, individual that have access to primary and secondary school education were more likely to gain a lucrative employment, have a happy family and become active and productive individuals in the society. Similarly, the study found that, individuals that were dropped out of high schools were likely to be more than twice without job and three times more likely to be under welfare assistance which cost the government billions of dollars. The investment in education has curtailed the number of high school dropout by half and has saves about 45 billion annually in terms of economic benefit to the society. An improved education leads to a stable employment which in turn, leads to increase in tax generation to at least 7 dollars for each pre-kindergarten education.

Furthermore, the study reveals that, 41 percent of prison inmates were unable to complete high school, and the annual cost of maintaining a prisoner was about 32,000 dollars, while the cost of quality education for an individual is about 11,000 dollars. An increase in male graduate rate by 5 percent will save 5 billion dollars in crime related expenses. Similarly,

an additional one-year increase in schooling will translate to a decrease in mortality rate by 7.2 percent for men and 6 percent for women. Completion of high school improves the health status and reduces dependency on public health program by 60 percent and reduces the rate of alcohol consumption by 6 times. A year increase in schooling was correlates to 13 percent increase in political primary turnout. In a nutshell, this study has contributed to the literature on education in relation to health, crime, and mortality. However, mix method approach should be conducted to strengthen the findings of this study for possible generalization.

Zimmerman (2014) assessed the relationship between education and health. The study adopted a conceptual approach, and the data for the study was obtained from secondary source. The result from the analytical analysis and citation shows that, individual with high level of education tends to be less likely to engage in risky behavior like smoking, drinking, and they are more likely to adopt to a healthy eating behavior and exercise. The study contends that, education offer individuals the ability to learn more about health-related issues in form of health education or curriculum in school, which later assists individual with the ability to absorb messages about critical lifestyle alternative to manage and prevent diseases.

In addition, the study shows that individuals with higher educational qualification tends to be more aware of health risks and may be more receptive to health education and campaigns. The study further contends that, individuals with high level of education tends to have lower exposure to economic stress and other economic deprivation. This study has contributed to the literature on education in relation to health and by extension rural

development, however, the study being a conceptual lack the strength for generalization, therefore, an empirical study needs to be conducted to strengthen the contention of this study empirically either qualitatively or quantitatively and from a different context.

In a bid to determine the impact of education on health and health behavior of middle and low-income countries, Cesur (2014) examined the impact of education on health and health behavior in middle and low-income country in Turkey. A Time Series Data, which covers a period of 2008 to 2012, were obtained from Turkey Statistical Institute of Health. Findings from the analyzed data reveals that, for women whose ages ranged between the 18 to 30 years old, education has no impact on their health status in form of overweight, obesity or smoking, and education does not correlate with women daily consumption of fruit, and vegetables. Furthermore, the study reveals the same result for men except that, education increases men's BMI and the propensity to get obese and overweight. This study has contributed to the literature on education in relation to health, however, mix method approach should be conducted to strengthen the findings of this study for possible generalization.

Grossman (2015) examined the conflicting findings among researchers on the relationship between schooling and health. A conceptual synthesis in which past studies on the relationship between schooling and health were cross-examines. The result from this synthesis reveals that, there is strong evidence to suggest that the relationship between schooling and health is contentious, as there were conflicting findings, some finding with a negative relationship, and others with positive relationship. For instance, the analysis of data obtained from US Population Bureau from 1910 to 2000 indicated that infant

mortality rate had decreased to about 30 percent, while those that completed high school has increased by 100 percent. In contrast, to findings by Grossman (2015), Kolata (2007) findings did not find any causality between schooling and health. Consequently, Amin et al. (2013) found no effect between schooling and obesity, smoking, and physical health from a sample of 741 female drawn from the UK. Similar findings were reported in a study conducted by Webbink et al. (2010) in which no effect was found between schooling and obesity in a sample of 350 male in Australian. This study has contributed to the literature on education in relation to health by synthesizing 38 studies from 2010 to 2014 on the conflicting findings on the relationship between schooling and health, however, mix method approach should be conducted to strengthen the findings of this study for possible generalization.

Similarly, Grossman (2015), Zajacova (2018) examined the relationship between education and health in USA. The study adopted Time Series approach and the data for the study was obtained from National Health Interview Survey 2002 to 2016. Findings from analysis shows that, education is linked with better health, long life, mortality, and a stratum of opportunities. The study further reveals that, education tends to have positive effect on men and women's health regardless of race and ethnic group. Furthermore, the study reveals that, 57 percent of white men, who were without high school diploma report poor health in comparison to about 9 percent of those with complete college education. Similarly, it was found that, education enhances the chances of having a better, stable and high pay job which by extension allow individual families to acquire wealth which in turn improve health status. The economic factor between education and health were estimated to account for 30 percent of the correlation. Like in the preceding reports, this study has

contributed to the literature on education in relation to health. However, mix method approach should be conducted to strengthen the findings of this study for possible generalization. Future research should focus not on the individuals but on group as previous studies marjorly focussed on the individuals.

In a similar study, Maralani (2014) investigated the link between education and smoking. The study adopted Time Series approach, and the data for the study was obtained from National Longitudinal Study of Adolescent Health (Add Health), which is a nationally representative panel data set, designed to assess the health behaviors of adolescents from 1994, 1995, 2008 and 2009. A logistic regression analysis, using Stata 12.1 software, was used as the tool for analysis. The result from the analysis reveals that the links between education and smoking in adulthood were probably in childhood rather than the effect of education producing better health. This study has contributed to the literature on education in relation to health, however, mix method approach should be conducted to strengthen the findings of this study for possible generalization.

In a similar study, FitzGerald (2011) examined the impact of educational attainment on life expectancy in Ireland. The study adopted Time Series approach, and the data for the study was obtained from Census Survey Office from the year 2006 to 2010. The result of the analysis shows that, there was substantial number of deaths among individuals with lower level of education in the population aged between 20 to 34 years, and less death among those with higher educational attainment. The finding suggests that, there was an observe variables that were responsible for the excessive number of deaths, which were factors at work over and above education. Furthermore, the study reveals that, long life

does not necessarily suggest that there was causal relationship between better education and life expectancy as suggested by some studies. This study has contributed to the literature on education in relation to health, however, mix method approach should be conducted to strengthen the findings of this study for possible generalization. Future research should focus not on the individuals but on future trends as what will happen if more people are educated in relation to health-related issues.

In the same vein, Goldman (2011) examines the relationship between education and health in low and high-income countries. This study was carried out in three countries USA, Costa-Rica, and Taiwan. Regression analysis was employed as tool for data analysis. The study adopted Time Series approach, and the data obtained from these three countries were analyzed using regression analysis. The result of the analysis revealed that, weak association exist between education and high-risk biomarker in Taiwan and Costa-Rica, in contrast to what was obtained in USA, where negative and significant association was found, especially among the women.

Furthermore, the result from the study revealed insignificant contribution of biomarker to educational disparities in the health outcomes. Additionally, the study found the existence of strong association between education and health status in high income countries than in middle income countries. This indicates the existence of high level of social stratification in the USA. This study has contributed to the literature on education in relation to health, however, mix method approach should be conducted to strengthen the findings of this study for possible generalization. Future research should adopt longitudinal biosocial survey approach in order to distinguish between variation in the

relationship between socio-economic status and health across different settings from a different methodological approach.

In a similar study, Duke (2016) examined the relationship between educational attainment and health with a focus on schooling, skills and self-related health issues. The study adopted Time Series approach, and the data for the study was obtained from National Longitudinal Survey of Youth, 1997. The sample consist of 8,984 respondents who were between the ages of 12 and 16 in 1997 and as of 2016, the waves of data were 16, covering 12 to 32 years. OLS (ordinary least squares) and GLMs (general linear models) statistics were used in analyzing the data. The result from the study found that, a significant proportion of non-cognitive and cognitive skills explained the effect of educational attainment on health and that such skills were found to have a larger effect than that of the highest level of educational attainment when properly measured. This study has contributed to the literature on education in relation to health, however, mix method approach should be conducted to strengthen the findings of this study for possible generalization.

In a similar study, Daura (2017) assessed the impact of education on health in developing nations. The study adopted a conceptual approach, and the data for the study was sourced through secondary source and the method of analysis was analytical. The result from the analysis shows that, educational attainment enhances, productivity, technological advancements, and increases the probability of a more healthy and productive population, all of which promotes socio-economic development. The study further contends that, because of the myopic outlook of poor family in making decision that centers on

education, they tend to prefer current subsistent needs over and above investment in education which carry a long term or an uncertain return. The study contends that, the inability of the poor family to invest in their children's education in low income countries, leads to a substandard level of education, which in turn result in poor health status of the children. In addition, the study reveals the existence of intergenerational transmission between education and poverty when family failed to invest in their children education, which could lead to vicious circle of low education, low health, and vice visa. This study has contributed to the literature on education in relation to health, however the study lack strength to make generalization because of its conceptual approach.

Similarly, Leuven (2016) examined the relationship between educational attainment and cancer in Norway. The study adopted a Time Series approach and sourced its data from a longitudinal data set of the Norwegian Population Register between 1947, 1954, 1954 to 1970, and the cancer information was obtained from Cancer Registry between 1954 to 2009. Regression analysis was used in analysis the data. The result from the analysis reveals that, education has little if any of impact, on cancer risk, except for lung cancer for men, while it increases the risk of colorectal for women. The result further indicates that, there was negative correlation between education and lung cancer on the protective effect as education causes people to smoke less because of their level of awareness. This study has contributed to the literature on education in relation to health, however, mix method approach should be conducted to strengthen the findings of this study for possible generalization.

In the same vein, Johnston (2014) examined the effect of education on health knowledge in the UK. The study adopted Time Series approach and the data for the study was obtained from longitudinal data from UK health and Lifestyle survey of 1984 to 1992. OLS regression analysis was utilized in analyzing the data. The result from the analysis reveals that, education significantly increases health knowledge, as one additional year in schooling increases health knowledge by 15 percent, whereas in instrumental variable model, the result was contrary, as it shows that, additional year in schooling, due to the reform did not significantly affect health knowledge. This finding is consistent with Brunello (2016), which found that, one additional year of schooling reduces self-reported poor health by 7.1 percent for females, and 3.1 percent for male. This study has contributed to the literature on education in relation to health, however, mix method approach should be conducted to strengthen the findings of this study for possible generalization. Future research should be conducted to clear the contradictory findings.

Similarly, Khan (2016) examined the causal links between education, health and economic growth in Malaysia. The study adopted Time Series approach, and the data for the study was obtained from the related agencies from 1981 to 2014 and vector autoregressive (VAR) investigation and vector error correction model (VECM) were used as the tools of the analysis. The result from the analysis reveals that, there exist positive and significant effect of education on health and economic growth. The study also reveals the policy relevance of education and health, which calls for policy makers to focus on education and health sectors for sustainable economic growth in Malaysia. This study has contributed to the literature on education in relation to health, however, mix method

approach should be conducted to strengthen the findings of this study for possible generalization.

Secondary school graduates tend to be more informed about diseases and are more likely to take proactive action. A typical instance of this was recorded between 1990 -2009, where about 2.1 million children, under the ages of 5 were saved as a result of their mother's secondary education (OECD, 2012). Secondary school educated mothers tend to be more informed about certain diseases, which allows them to take preventive measures than those without education at all. Hence, secondary school educated mothers have accounted for 29 percent reduction in maternal mortality rates in Nigeria (Garidou et al, 2012).

Malaria happened to be one of the world most deadly killer diseases. This is because, it has been reported that in every one minute, a child is killed by malaria globally (Ndjinga, 2011). Accessibility to secondary education is therefore, imperative for safeguarding this ugly trend by taking proactive measures, like the use of mosquito nets or drugs. In another study in People's Democratic Republic of Congo, where the highest number of deaths among children have been recorded due to malaria fever, it was found that, educated household heads increased the probability of family sleeping under bed nets. Such changes have resulted in fewer malaria infection, especially in areas with high risk of transmission (Ndjinga, 2011; You, 2015).

Based on the investigation of previous studies above, that relate to education and healthcare, which revealed the existence of positive relationship between the two variables, this study postulates the following hypothesis:

H1e: There is significance relationship between Education infrastructure and Healthcare.

2.9 Non-Governmental Organisations (NGOs)

The term NGOs has over the time obtained different types of meanings. The term has been defined variously from different perspectives and background in the extant literature. Accordingly, NGOs have been defined as private organization that are established to meet some social objectives with non-profit focus, and are independent of formal state system (Dand, 2003; Gray 2009). Vivian (1994), defines NGOs as a substitute entity that focuses on human upliftment, especially the vulnable people in the society through empowerment strategy. NGOs are private organizations different from that of government, as well as private profit-oriented organizations, which are involve in developmental efforts especially in the rural areas. NGO can also be defined as, independent entities that get involves in service provision such as, operating and running schools and clinics, project initiation and execution, road and school construction, capacity building for skills acquisition (Kabiru, 2016).

Basically, there are two types of NGOs that are often discussed in literature. These are, International NGOs and Advocacy NGOs. An international NGOs are those entities that are based in most western countries and from other regions of the world, such as, in Asian and Arabian countries. These types of NGO are primarily involved in making donation to local NGOs to initiate or to undertake projects. They do not participate directly in-service provision or project execution, but rather, they collaborate with the local NGOs through funding, they do not involve themselves in field project (Vivian, 1994). An advocacy

NGOs on the other hand, are more of awareness campaigners. They draw the attention of the public to some certain issues, such as HIV/AIDS, environmental pollution, desert encroachment, and erosion problem. Primarily, advocation NGOs engage in sensitization campaigns in order to education the public or government, on the consequences of one issue or the other.

Although, there are dearth of literature that have explores the possible contribution of NGOs to rural development. However, among the scanty studies that have been conducted on the role of NGOs on rural development, it has been established that, NGOs were genuinely imaginative, self determining, and dedicated to some equality and all-inclusive principles as their bases of foundation. These qualities have contributed to the success recorded by NGO in rural development (Vivian, 1994).

The number of NGOs was estimated to be around 10 million worldwide that comprises of operational NGOs, advocacy NOGs and humanitarian NGOs. Recent statistics has shown that, an estimated 1.5 million NGOs both domestic and foreign NGOs have been functionally active in the United States in 2017 that focus mainly on advocacy and humanitarian activities (United Nation, 2017). Russia had about 277,000 NGOs in 2008 which mostly engage in advocation campaign, while a substantial number of them also engage in development project, building bridges and construction of school and healthcare facilities.

India is estimated to have had around 2 million NGOs in 2009, the current number of NGOs is not yet available, but the existing ones were mostly operational NGOs that focus on rural development such as in poverty alleviation program and skill acquisition training,

as well as assisting in educational and healthcare related issues (United Nation, 2017). China with its current population of 1.3 billion people is said to have formally registered 440,000 NGOs officially, which mostly focus on improving the standard living of the rural people through improved agricultural practices. In Africa, there are about 60,000 registered NGOs, operating in the continent among which Kenya has the highest number of NGOs having 12,000 NGOs that work in healthcare, education, human rights and civic engagement (United Nation, 2017).

Academic study on modern NGOs was a recent development, as the first set of academic literature on NGOs emerged in 1990s, such as the work of Clark (1990), Korten, (1991), and Fowler, (1997). While these works were mainly case studies in approach, substantial number of the studies that were available on the net were conducted in the Western context which has a different perception of rural development, thus creating a vacuum to be fill from other contextual perspective such as Africa and Asia. The following decades witnessed a tremendous increase of literature on NGO from both Europe and Asia such as the works of Hilhorst, (2003), and Igoe & Kelsall, (2005). The second-generation of scholars were also skewed to the West, while in Africa, study on NGOs was scanty up to this time as to the knowledge of the scholar, only few studies were conducted on NGOs in Africa such as, study by Vivian (1994), and recently by Bright (2015) in Ghana. Based on this background, this present study was conducted in West Africa Nigeria, in order to expand the frontier of knowledge from a different and a newer context.

The role of NGOs in both urban and rural development has been recognized by the United Nation and the World Bank by officially listing some NGOs as development partners.

NGOs have played a significant and key role in advocating for sustainable development at the international level which led to the Millennium Development Goal (MDG) in the beginning of the 1990s. NGOs have been in the fore front on the campaign for the eradication of poverty, especially in low income countries as well as agitation for the eradication of hunger, diseases, environmental degradation, and employment generation (Vivian, 1994).

From the perspective of the World Bank (2015), NGOs can be perceived as those organizations, groups and institution completely independent of government and they are primarily non-commercial, but rather humanitarian and cooperative in pursuing their objective. They are mostly private agencies or third sector organization, predominantly in industrial countries that assist in supporting international development. NGOs comprises of religious and charitable organization that assist poor people with food, family planning services and promote community organization. NGOs also comprises independent cooperatives, village organizations, women associations, as well as pastoral associations, and citizen group that advance awareness and influence policy direction (Vivian, 1994).

Characteristics of NGOs

NGOs can be distinguished from other organization by their characteristics, orientation, as well as their functions. Some of the most common characteristics of NGOs are:

- Engaging in relief activities
- Promoting interest of the poor
- Protecting the environment

- Providing basic services
- Advocating community development
- Promoting democracy
- Advocating for human right
- Promoting sustainable socio-economic development
- Providing humanitarian relief
- Supporting educational and cultural renewal (Rice & Ritchue, 1995).

Roles of NGOs

- Providing relief to victims of disasters and assisting the poor
- Reducing people vulnerability through income diversification and savings
- Increasing people's chances and opportunities
- Redressing social, physical and economic exclusion or oppression

Categories of NGOs

NGOs is a broad term that comprises various types of organizations which include:

Operational NGOs- This type of NGOs focuses primarily on designing and execution of developmental project such as school construction, economic empowerment as well as skill acquisition.

Advocacy NGOs-This type of NGOs majorly operated at the international level, they seek to influence policies of countries at the international arena, their focus is more on defending and promoting specific course such as environmental

sustainability, water and energy pollution campaign, and promotion of community health services as well as HIV/AIDs management services (Rice & Ritchue, 1995).

Humanitarian NGOs-This type of NGOs mainly concentrate on providing assistant to people who were affected with one type of disaster or the other (red-cross). Community social problem such as juvenile delinquency, run-away street children, prostitution, women and children rights (Vivian,1994).

2.9.1 Non-Governmental Organizations and Education Infrastructure

NGOs over the past decades have played a major role in enhancing access to education in terms of helping the venerable poor get access to basic education particularly in less income countries. According to UN report of 2017, there are about 38 international NGOs whose primarily concern was on education focusing on school construction, provision of learning material, training teacher, provision of educational infrastructure. These NGOs include, Global Partnership, Save Children Achieve, Child Empowerment International, Education Trust (Rice & Ritchue, 1995).

According to UN estimate of 2017, there are about 262 million children and youth that were out of school globally. The estimate further indicates, that out of the 262 million children, 64 million children were from primary school, 61 million from lower secondary school, and 138 million from the upper secondary level. Of these number, 17 million children were from India, while 10.5 million were from Nigeria. This was as a result of lack education infrastructure to accommodate the teeming number of school age children (United Nation, 2017).

Provision of education infrastructure in developing countries by government has been a failure due to the lack of resources and political will. As government failed woefully in providing adequate education infrastructure for smooth and qualitative running of the educational system. Thus, the NGOs as alternative development agency came in to fill the vacuum. In order to fill the gab created by governments around the world, international and local NGOs took it upon themselves to provide such educational infrastructure around the globe. For example, Global Partnership for Education assisted 65 low income countries in ensuring every school age child has a good and qualitative basic education, most especially the poor who are the most vulnerable and are mosttly living in countries perturb by conflict. From 2002 to 2018 GPE partners have recorded a land mark achievement in helping millions of children in enrolling in school for a quality education. To this end, GPE partners have assisted 77 million children in enrolling in primary school in 2016 in partner countries, and out of these 77 million children, 76 percent completed primary school in 2015 compared to 63 percent in 2002. Similarly, GPE partners was able to assist 66 percent of partner countries in completing their primary school in 2016 compared to 42 percent in 2002 (United Nation,2017). Furthermore, GPE partners had assisted partner countries in improving their education planning quality standard by 96 percent in 2016/17, compared to 58 percent in 2014/15. In terms of budgetary allocation to education, GPE partners encouraged 79 percent of GPE partner countries to maintain their education budget at or above 20 percent of public expenditure or increased their education budget in 2016. Similarly, 4,000 classrooms were rehabilitated, 29 Million textbooks were distributed, and 400,000 teachers were trained with GPE funding in 2017 (United Nation,2017).

Another NGOs Save the Children US, has made a tremendous contribution in providing education infrastructure around the globe, for example in 2017, Save the Children US had reached out to about 155 million children in 120 countries around the world, as well as 237,000 children in the United States. In Asia, for example, it is difficult to ignore the contribution of NGOs in the education sector especially in terms of service delivery and school management (Begum, 2003). In a study by Hossain (2016), it was revealed that NGOs in Bangladesh BRAC is playing a significant role in enhancing basic formal and non-formal primary education in the country. BRAC which is the most dominant NGOs in the country initiated a programme where older children who had never attended school were enrolled into schooling from grade 1 to 3 and more than 30,000 schools were constructed with about a million pupils' enrolment. Similarly, there are about 500 NGOs in Bangladesh who are actively engage in providing basic primary education that accounted for 8.5 percent of the educational system in Bangladesh.

In Africa, the role played by NGOs in terms of education infrastructure provision has been tremendous. For example, Bandi (2011) asserted that about 50 schools are currently providing educational opportunities in Kenya by SNV a Netherlands-based NGO which has constructed about 125 schools in the country. Another NGOs in Kenya that made a land mark contribution in education is the SOS, since 1975, SOS started operating where it focused on the less privilege people by providing the orphans with homes care, good education, as well as training for skill acquisition in various parts of Kenya such as in Eldoret, Meru, Mombasa, and Nairobi districts.

Relatedly, ActionAid Kenya committed to building 17 boarding schools for girls in the North Rift Valley, the project is being carried out simultaneously in Ghana, Kenya and Mozambique (ActionAid, 2009). On school dropout, Kiseu (2012) found that, prior to Plan International intervention, 130 pupils dropped out in 20 selected schools in Kibaha and Kisarawe District Councils, but when Plan International intervened, the dropout syndrome reduced to drastically to 0.5 percent.

In Nigeria, there about 46,000 registered NGOs receiving 20 million Euro as assistance from the European Union. NGOs in Nigeria were abled to play a vital role in terms of educational development and assistance to the less privilege. In Nigeria, the most prominent NGOs are the religious who primarily focus on welfare assistance. Other NGOs that operate in Nigeria are, the philanthropist and the multi- national and bi-lateral organizations and other private companies. The most prominent NGOs that made a trade marks in terms of educational development in Nigeria includes, UNICEF- United Nation Children Education Fund, UNESCO- United Nationa Education Scientific and Cultural Organization, USAID- United State Agency for International Development, WHO- World Health Organization, and other national and Local non-governmental Organizations, operating in different ways and names (Writer & Payment, 2017).

As part of their contribution toward education, Hope for African Children Initiative, have selected and sponsor seven out-of-school children, they also provided educational materials and full scholarships to go back to school and also gave out educational materials to about 1,000 children in Makoko, Lagos. Furthermore, the NGOs had also took back to school another batch of out of school children numbering about 2,000, brilliant children

were also selected and given scholarship up to university level, this was part of their day to day activities since their establishment in 2014.

Similarly, Oando Foundation had built a block of six classrooms in a primary school in Itori Ewekoro. The capacity of the primary had increased as it accommodate over 1,000 additional students. In the same vein, Ford Foundation has made a tremendous contribution to education by establishing a comprehensive high school in Aiyetoro community in Lagos state (Oladele, 2016). Furthermore, Ford Foundation has made available the sum of $375,000 to ensure overall assistance in the areas of capacity building, training, and technical assistance as well as providing another $150,000 for endowment building and investment management for universities in Nigeria (Oladele, 2016).

In Katsina State, the major NGOs that contribute to the development of education in the State in terms of material and financial support both domestic and international are, the UNICEF, DFID, ETF, UBEC, KEF and several other NGOs, CBOs and CSOs. According to the ministry of education, the total amount contributed by various NGOs in the State amount to 10 million, while an estimated 200 classes were constructed across the State by the NGOs.

2.9.2 Non-Governmental Organizations and Poverty

A study conducted by Donovan and Poole (2011) to investigates the activities of Soppexcca members between 2006 and 2009, has found that there was significance relationship between the NGOs and rural dwellers. This is because, rural dwellers benefited from the poverty intervention programme significantly, as about 75 percent of

them were able to get out of poverty. In another study by Truong (2013), the NGOs assistance to rural dwellers has contributed immensely in reducing the rural poverty level through the process of cultural conservation and poverty alleviation projects, which provides new incomes for about 58 local households in Vietnam. A similar study conducted by Jamali et al (2011), revealed that through the efforts of Badin rural development society, about 1500 women and 2800 men, in 60 villages in Pakistan were able to get out of poverty. In a similar study by Khan (2011) it was study found that, the overall assessment of NGO's interventions had impacted a positive and significant change in area the of poverty reduction and women empowerment.

Karkee (2016) found that, NGOs had immensely contributed to job creation in Nangi Nepal as the NPISH which was established and run by the NGOs had more than 100 employees working in various fields which account to about 90 percent of the wage employment in the area, also the NGOs were able to trained the local people on how to make handmade paper from a local plant called Argeli and sell to Japanese firm, this initiative created employment for some of the villagers and has created a source of income for them that use to last for three to four months.

Similarly, Michelson (2013) investigated the effect of NGOs on employment generation and income in Kenya, the study found a significant positive effect on those villagers that participated in the project, where participant were thought on how to directly sell their product to the mall and this initiative was found to increase their productive assets by 16 percent which is an equivalent of 200 USD of the annual household income, and the estimated effect on productive assets is significant at the 1 percent level.

Ishata (2017) investigated the contribution of Grameen Bank and BRAC in Bangladesh and the study found that these, two NGOs have contributed to the development of the rural people in terms of poverty alleviation and employment generation. The study found that, Grameen Bank through its loan initiative were able to get to the poor as the current enrolment stand at 8.64 million people, with 40 zonal offices, 266 area and 2568 branches scattered all over the country which comprises of 81,390 villages accounting for 93.16 percent of the total villages in the country. Furthermore, for employment, BRACK employs 65,000 artists and have also hired over 100,000 employees with which 70 percent are women, also BRAK had expanded its frontier beyond Bangladesh to 10 other countries and 3 continents and had assisted over 120 million people around the globe to be self-employed.

Based on the emerging researches, addressing the relationship between NGOs and poverty, it was found that, education has positive and significant influence on poverty, therefore, this study hypothesis that:

H2a: NGOs moderates the relationship between education infrastructure poverty reduction

2.9.3 Non-Governmental Organizations and employment

In a study conducted by Ahsan (2007) in Bangladesh, findings showed that NGOs has significantly contributed to employment generation of the rural dwellers by 7.3 percent in last 3 months, with 47 percent for jobs that last between 3 to 6 months, 38 percent for jobs that last between 6 to 9 months, and 98 percent for jobs that last less than 3 months. The overall contribution of NGOs in job creation was significantly high at ($p>0.000$).

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Dorothea (2018) revealed that, Hand in Hand international NGOs has created about 2.8 million jobs in 10 low income countries, helping 2 million people to establish their own businesses. The NGOs was instrumental in establishing 20 group made of young people who support one another to save money and to learn together, through entrepreneurship young people were abled to fend for themselves and break the vicious circle of poverty. Through the entrepreneurship initiatives, Hand in Hand helped 2.19 million youths to run 2.2 million businesses and created 3.2 million jobs and improve the living standard of 12 million people. Furthermore, the NGOs were instrumental in collaborating with government in organizing a three-year program on youth in Mombasa Kenya, where the program trained 8,000 young people on employability skills as 5,000 employment opportunities were created.

Based on the investigation of previous studies above, that relate to NGOs and employment which revealed the existence of positive relationship between the two variables, this study postulates the following hypothesis:

H2b: NGOs moderates the relationship between education infrastructure and employment.

2.9.4 Non-Governmental Organizations and self-employment

Ahsan (2007) conducted a study in Bangladesh on the impact of NGOs on employment generation, and the study found that, NGOs has significantly contributed to employment generation of the rural dwellers by 7.3 percent in job that last for 3 months, 47 percent for jobs that last between 3 to 6 months, 38 percent for jobs that last between 6 to 9 months, and 98 percent for jobs that last for less than 3 months. However, the overall contribution of NGOs in job creation was found to be significantly high at ($p > 0.000$).

The relationship between NGOs and self-employment has not been studied adequately, however, from the scanty studies that were reviewed above, which shows a positive relationship between the two variables, this study hypothesized that:

H2c: NGOs moderates the relationship between education infrastructure and self-employment

2.9.5 Non-Governmental Organizations and Agricultural productivity

NGOs have been found to be a key factor for the successful development of farmer cooperatives in Northwest of China (Garnevska, 2011). In a related study conducted in

Zimbabwe by Mandirahwe (2016), it was found that NGOs contributed significantly towards the improvement of the livelihoods of farmers in ward 5 of Mutasa District in Manicaland Province of Zimbabwe. A recent study by Bebbingto & Farrington (2017) found that, NGOs contribution to agricultural development centers not only on farm implement, but they venture into areas of research, extension services, technology transfer, institutional capacity development, innovation and effective policy implementation mechanism.

In a study by Bingen (2015), it was found that NGOs has contributed to the development of agriculture in rural Rwanda ranging from extension work to the distribution of agricultural inputs, increasing agricultural production, revenues, and food security. It was also found that, within the agricultural sector, NGOs were involved in poverty reduction programs as well as improving the quality of life of the most vulnerable poor. They also engage in eradication of injustice, and promoting greater equity, peace, and reconciliation.

Ndungu (2015) investigated the role of NGOs in agricultural development in coastal region of Kenya, and 11 out of 25 NGOs that were in the region were found to be active in agricultural development. The study found that, the NGOs were able to trained 39 extension officers among the rural people, and they were also able to established contact with 196 farmer groups that comprises 5,320 farmers. It was also found that, the NGOs participate in other field such as health, water, and micro-enterprise development.

In a study by Ochijenu (2006), NGOs were found to contribute significantly to the development of agriculture in Kogi State Nigeria, in areas of farming method application and farmers participation, initiation and execution of programs as well as in decision

making process. Furthermore, the study also found that, other areas where NGOs made a significant contribution were in the provision of improved seed, new varieties of crops, equipment operation services, introduction of high breeds livestock, organic fertilizers, new storage system, tractor lending services, insecticides and improved oil palm seedlings, provision of information and communication technology facilities to assist in disseminating of new innovation and information pertaining weather forecast, credit facilitation and market information, also, the study found that, among the means through which NGOs used to improve the income level of the rural people were through the creation of effective marketing strategies thereby expanding the income generating capacity of the rural farmer as well as encouraging and enhancing the capacity of co-operative societies and granting of single digit interest loans to farmers for the purchase of agricultural inputs.

The relationship between NGOs and agricultural productivity has not been given due attention, however, based on the few studies that were reviewed above, where most of the findings indicates a positive relationship, this study therefore, hypothesized that:

H2d: NGOs moderates the relationship between education infrastructure agricultural productivity

2.9.6 Non-Governmental Organizations and healthcare

Bright (2013) found NGOs to have provided many services in the area of maternal and child health, such as safe birth centers, mobile health clinics, nutritional programs, and treatment of childhood diseases. Similarly, Ndjinga, 2011) found that, NGOs offer a wide range of psychosocial and educational counseling services to the rural dwellers. The study

also found that, NGOs have contributed emmensely to the promotion of good health by overcoming disease that requires strong interventions and proper attention. There has been evidence over a period of many years that, the public sector in South Sudan and Yei River County, are lacking the capacity in the context of delivery and management of health services. NGOs as a third-party sector have made a significant contribution in health care provision to these areas, in the light of the current shortage of government resources. In a study conducted by Das (2016), it was found that, NGOs had contributed toward the development of Andhra Pradesh, Maharashtra and Tamil Nadu healthcare sector as NGOs contributed 2 percent of total health expenditure in India, furthermore, about 9 percent of subsidiary healthcare service were handled by NGOs, 11 percent supportive services, and 88 percent outreach services, own 3.3.percent of primary care services and 8 percent of OPD clinics. Similarly, in another related study in Ethiopia, Bulama (2017), it was found that, 7 percent of the total healthcare facilities were operated by an NGOs, serving about 700,000 hundred people mostly in the rural areas.

In the same vein, Yagub (2015) found that, the government of North Dafur spend roughly 70 percent of its total budget on security leaving the remain 30 percent to the remaining sectors, while it spends less than 1 percent to healthcare sector, NGOs have been providing the 70 percent curative healthcare services to the people by assisting with 52.9 percent of the healthcare budget. Also, NGOs provide more than 50 percent of trained nurses who provide care and treatment services to the people, and about 23 doctors were trained to provide laboratory services. Furthermore, NGOs have supported and assisted 89 public health services centers, and established 24 healthcare centers in IDP camps.

Similarly, in Angola, Morten (2012) found that, about 80 international NGOs staff were deployed in 9 of the 18 provinces of Angola providing support to primary and secondary healthcare services, where about over one million refugees were taken care of during Rwandan conflict of 1994.

In a similarly study by Kankya (2013) it was revealed that, NGOs had played a significant role in healthcare service delivery in Uganda. The study found that, NGOs were actively involved in child immunization services, maternal healthcare services, healthcare related issues campaign, and provision of physical infrastructures such as the construction of clinics and dispensaries.

The relationship between NGOs and healthcare has received little attention of researchers, however, from the little studies that were conducted, where most of the findings indication a positive and significant relationship, this study therefore, hypothesized that:

H2e: NGOs moderates the relationship between education infrastructure healthcare

Table 2.2

Summary of Hypotheses

	Hypothesis Statement
H1a	There is significance relationship between education infrastructure and poverty reduction
H1b	There is significance relationship between education infrastructure and employment
H1c	There is significance relationship between education infrastructure and self-employment

H1d	There is significance relationship between education infrastructure and Agricultural productivity
H1e	There is relationship between education infrastructure and Healthcare
H2a	NGO moderates the relationship between education infrastructure and poverty reduction
H2b	NGO moderates the relationship between education infrastructure and employment
H2c	NGO moderates the relationship between education infrastructure and self-employment
H2d	NGO moderates the relationship between education infrastructure and agricultural
H2e	NGO moderates the relationship between education infrastructure and healthcare

Rural development had been viewed from different perspectives in the past, and the most dominant perspective was from agricultural view. For example, the World Bank (2012) conceives rural development from agricultural perspective, where rural development was equated with agricultural development. This view is supported by Tersoo (2014) who states that, rural development cannot be distinguished from agricultural development, they are synonymous. In contrast to agricultural perspectives, Eneh (2011) defines rural development as a method that put together some concrete efforts in enhancing the rural productivity by way of diversification of the rural means of income, through generation of employment opportunity with the aim of attracting the rural people to continue their staying in the rural areas.

A broader perspective has been adopted by Arong (2010), who argues that, rural development aimed at uplifting the miserable lives of rural people through the

improvement in the social and economic aspect of their lives. This view is supported by Francis (2012) who argues that, rural development implies improvement of living condition of the rural people by increasing agricultural productivity, and other socio-economic activities in the rural areas. As for this study, rural development is perceived as a series of efforts geared towards improving the living standard of the rural dwellers, be it through agriculture or through any other mechanism.

The central feature underlying this concept of rural development is that, it is a planned strategy that is geared toward improving the living condition of the rural people. However, the strategies adapted in achieving rural development vary from developed and developing countries. For instance, Jaafar (2015) examined the role of tourism in rural development and the findings reveals that, tourism activities have significantly enhanced the quality of life of the rural people through improved income. In the same vein, Gonzalez (2013) examined the role of heritage site in fostering rural development in Spain, and the findings shows that, tourism significantly influence rural development. Similarly, findings from Piket (2013) who examined the cycle tourism as a viable mechanism for rural development in EU, have reveals that, cycle tourism contributed significantly to the rural economy. In contrast to Jaafar, Gonzalez, and Piket, Hildén (2012) examined the role of agriculture in rural development in Finland, and the findings shows that, agriculture significantly impact on rural development. In the same vein, Todo, and Takahashi (2013) evaluates the effects of farmer fields income on agriculture in rural Ethiopia. The study found that, the income of participants in the farmer fields school programme increased by about 60-160 US dollars more than the average earn income per employee prior to the project. Similarly, Teklewold (2013) assessed the adoption of

multiple sustainable agriculture as a strategy for rural development. The result of this study indicated that, there is significant correlation between multiple sustainable agriculture adoption and rural development. Unlike Hildén, Olojede (2013) who examined the rural education as the solution to socio-economic development of Nigeria. The study contends that, literacy is very important to individuals, group and society as it helps in inculcating values, and norms which are essential ingredients for socio-economic development of any society. The study further argues that, literacy benefit individuals in such ways as in numeracy, reading, handwriting, healthcare, and political awareness. The study also argues that, despite the unprecedented growth of school enrolment there is still more people that are illiterate, particularly rural people which result in breeding unemployment, poverty, violence, and political instability. The study, therefore, suggests that for sustainable rural development to be realize in the rural areas, more schools has to be provided to meet the educational needs of the rural areas.

In a similarly study, Omoniyi (2013) examined the role of education in poverty alleviation and economic development. The study contends that, education is one of the essential vehicles for achieving sustainable economic development through human capital development. The study further contends that, education encourage self-understanding, enhances live quality, improve productivity and creativity as well as technological and entrepreneurship, in addition to the role education plays in obtaining economic and social advancement, education also enhances income which lead to poverty reduction and employment generation.

Within the same perspective, Kilasi and Havnevik (2011) examined the impact of education on rural community development of some selected Haydom Lutheran hospital's education programmes in Mbulu district of Tanzania. The findings demonstrated that, non-formal education and formal educational systems played a significant role in improving the standard of living of the rural dwellers around the hospital.

From the above synthesis, it is evident that rural development is a multifaceted phenomenon that has several dimensions from which scholars view it. The most dominant perspective was the agricultural and poverty alleviation perspective, whereas this present study views rural development from education perspective as a panacea to rural problem.

2.10 Summary

In this chapter, literature pertaining to rural development, education infrastructure and NGOs has been discussed in detail. The chapter had also discussed extensively on the relationship between education infrastructure and rural development as well as the relationship between NGOs and rural development. However, what was deducted from the literature review indicated that, literature on rural development is inconclusive as there were no single studies that was carry out using any variable as a moderator. Thus, this study has introduced NGOs as a moderator to determine whether it will have an influence on the relationship between education infrastructure and rural development. The theoretical framework of this study was premise on the literature review. The study adopted human capital theory as the underpinning theory of the study which establishes the linkage between education infrastructure and rural development from different

perspectives. The next chapter which is chapter three discusses the methodology of the study.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

Essentially, this chapter discusses the methodology of the study, the sources of data collections, and the method of data analysis. Similarly, sample size and the sampling technique of the study were highlighted, also the statistical tools adopted for the study for data analysis and test of hypothesis were discussed.

3.2. Research Philosophy

A research is a scientific inquiry guided by certain philosophy, both theoretical and methodological that suite the type and nature of the problem. The nature of the problem will inform the researcher as to what philosophical background he should adopt to undertake the study to proffer solution to the problem. Given the nature of our research problem which is rural development, the most appropriate approach to investigate the problems is the positivist approach, this is because the researcher, wants to as much as possible to be objective in conducting the research without predetermining the outcome or biases.

Broadly viewed, each researcher has a distinctive view on certain social and physical nature of a social reality, or knowledge built on their philosophy. Hence, aligning research and the perspective from which the researcher is looking at the problem will invariably

assist in elucidating a researcher's theoretical frameworks (Creswell, 2012). From subjectivism, realism, and positivism perspective, the aim of research was to generate laws or procedures which govern ways upon which the research will be conducted. The generalization of causal relationship will enable more understanding of a phenomenon which will guide in accurate prediction and the ability to proffer solution to a given problem or situation in the social environment (Bhatti, 2015). The concern to develop causal proposition supported by data and logic, underpins an emphasis on the need to develop some objective procedures for conducting research free from bias. For these reasons, this study has adopted positivism as its philosophical background.

3.3 Research Design

A research design is the method adopted in carrying out a research. Quantitative survey research is deductive in approach. The quantitative deductive method of enquiry allows the data analyzed to speaks for itself in making sound conclusion (Bhatti, 2015). Essentially, there are three distinguished categories of research design as identified by Bhatti (2015) which include, survey or non – experimental, that consist of questionnaires and interviews, the other category is experimental design which is usually conducted in the laboratory such in biology, physics and chemistry. The third category is the historical design, which is usually conducted through observation or excavation and documentary as well (Creswell, 2017).

As for this study, the survey or non – experimental design was adopted, this is because the design is more scientific in its approach to data generation and collection, as it allows collection of unbiased and objective fact that a researcher can rely on to make accurate

and scientific findings (Creswell, 2017). Survey research is well structured design that was based on certain rules and procedures which minimize research errors. Hence, the survey method does not give room for manipulation of the research findings by the researcher, and this has allowed the study to be realistic pertaining the findings, since it adheres to a laidown scientific methodological rule which guides the whole process of the study. The research design utilizes questionnaires as instrument for data generation and collection as it relates to the effect of education infrastructure (IV) on rural development with specific emphasis on poverty, employment, self-employment, agricultural productivity, healthcare (DV) and NGOs (MV).

3.4. Population and Sampling Design

A population may finite or infinite, finite population is that which cannot be counted such as the total number of ants in the world, whereas infinite population is that which can be counted such as human population, number of Coca-Cola companies in the world (Creswell,2017). In a nutshell, population whether it's finite or infinite denotes the total sum of people, event, or things that relate to the research work (Babbie, 2013).

Nigeria is the expanse population of this study, Nigeria is located in West Africa and has six geo-political zones (South-South, South-East, South-West, North-Cental, North-East, and North-West) which made up the 36 states of the federation. Nigeria was chosen to fill contextual gap because most of the studies on rural development which are accessible online, were mostly conducted in Western and Asian context which significantly differs from African perception of rural development (Wigan,2007; Chambers,2014).

Additionally, Nigeria has the highest population in Africa and is ranked 7th in the world and could serve as basis for generalization (NBS, 2017).

Moreover, the population of Nigeria which is currently estimated at 198 million people, is majorly made up of rural areas which suite this study as the study is on rural development. North-West zone was chosen because, the zone has the highest population of rural people among all the six geo-political zones in the country. Additionally, the zone accounted for more than 40 percent of the total population of Nigeria which suited this study for generalization. Figure 3.1 below, indicates the location of the North-West zone in the of Nigeria in (yellow), while in the map of

Katsina, the location of the selected local governments were shaded in (red).

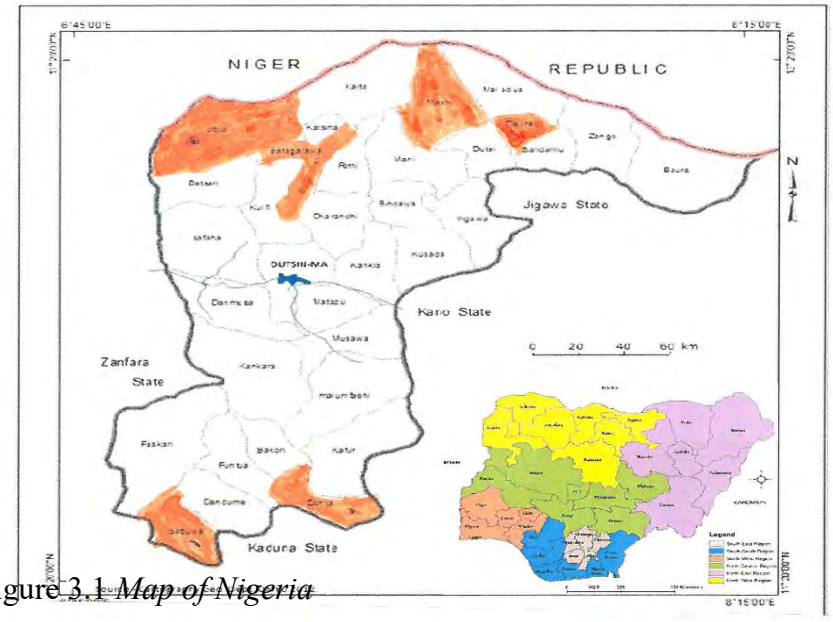

Figure 3.1 *Map of Nigeria*

3.4.1 Poluation size

The specificate population of this study consist of all the 34 local governments of Katsina which stand at 5,801584 as at the last population census of 2006. Katsina state is located in the North-Western part of Nigeria, bordering with Kaduna by the West, Kano by the East, Sokoto and Zamfara by the South and Niger republic by the North. Katsina state was chosen largely because, out of the total population of 5,801,583 of the state, about 80 percent of the population resides in the rural areas (Mashi, 2016; NBS, 2017; Atlhopheng, 2018).

Additionally, Katsina State was chosen to fill regional gab, this is because most of the studies that were conducted in Nigeria pertaining to rural development were mostly from the Southern part of the country such as (Fafunwa , 2004; Bolaji ,2007; Olaniyan, 2008, Joshua, 2012; Ige, 2013; Damilola 2013; Etim 2014; Joshua ,2014). Hence, by conducting this study from the Northern part of Nigeria the gap has been bridged. Moreover, Katsina State is one of the states that make up the North-West geo-political zone in Nigeria. Therefore, by chosen Katsina State, this study could serve as a representative of the zone, as the State is second most populous State in the zone (NBS, 2017).

3.4.2 Sampling size

A sample can be described as a subset of the entire population, from which selection is made during the sampling process (Gentles, 2015; Taherdoost, 2016; Creswell, 2017). In order to select the sample from the population, the population of this study was divided into three Senatorial Zones, zone A, consist of 11 local governments areas, Zone B consist of 11 local government while Zone C consist of 12 local government, and in each of the

zones two local government areas were selected from where the sample was drawn. Multistage and purposive sampling techniques were used in drawing the sample. The multistage sampling cluster design is useful when a researcher is faced with a large population (Babbie,2013; Bougie 2016; Etikan, 2017; Creswell, 2017). As mentioned above, this study had divided the population into three layers, the first layer consists of the three Senatorial Zones (A, B, C), the second layer consist of the local government within each of the Zones, the third layer consist of three local government from wherein the sample was selected. The multistage process was further explained in table 3.1 below

Table 3.1
Katsina State Senatorial Zones

S/N		**Senatorial Zones**
1		**Katsina Central**
Ii	Kaita	Local Government
Iii	Jibia	Local Government
Iv	Batsari	Local Government
V	Safana	Local Government
Vi	Dutsanma	Local Government
Vii	Kurfi	Local Government
Viii	Batagarawa	Local Government
Xii	Rimi	Local Government
Xii	Charanci	Local Government
Xiii	Musawa	Local Government
	Katsina	Local Government
2		**Katsina North**
Ii	Daura	Local Government
Iii	Mashi	Local Government
Iv	Mani	Local Government
V	Ingawa	Local Government
Vi	Bindawa	Local Government
Vii	Sandamu	Local Government
Viii	Dutsi	Local Government
Xii	Kankia	Local Government
Xii	Kusada	Local Government
Xiii	Baure	Local Government
X	Maiadua	Local Government
	Zango	Local Government
3		**Katsina South**

Ii	Danja	Local Government
Iii	Dandume	Local Government
Iv	Bakori	Local Government
V	Kankara	Local Government
Vi	Malumfashi	Local Government
Vii	Kafur	Local Government
Viii	Musawa	Local Government
Xii	Matazu	Local Government
Xii	Sabuwa	Local Government
Xiii	Funtua	Local Government
X	Faskari	Local Government

Using Saunders (2007) formula, the output of the computation is 384, therefore, the initial sample size is 384 respondent across the six selected local governments as indicated in table 3.2

$$n = \frac{N(p)\,(1-p)}{(N-1)(\frac{B}{c}) \quad + (p)(1-p)}$$

$$\frac{(5{,}801{,}584)(0.5)(1-0.5)}{(492054-1)(\frac{0.05}{1.95})^2 + (0.5)(1.05)}$$

$$\frac{(5{,}801{,}584)(0.5)(0.5)}{(492053)0.000651 + (0.5)(0.5)}$$

$$\frac{123013.5}{320.327 + 0.25}$$

$$\frac{123013.5}{320.577}$$

≈ 384

The sampling size was distributed amont the six selected local government (Jibia, Batagarawa, Daura, Mashi, Danja, Sabuwa). The six local governments were selected because they were mostly the backward in terms of educational development in each of the Senatorial Zones (Usman, 2013; Olasehinde, 2014; Olutola, 2018). At the last stage of the selection, purposive sampling techniques was used in selecting the final six local governments. However, as explained in chapter four under the administration of questionnaire, 50 respondents were added to the initial sample of 384 making the sampling (434). This is to minimize the issue of sampling biases such as non-responses bias and sampling error as suggested by (Salkind, 2012; Dolnicar, 2014; Lewis, 2015). The distribution of sampling is indicated in table 3.2 below.

Table 3.2

Distribution of Sample Size

Local Areas	**Population**	**Sample Size**
Jibia	167,435	63
Batagarawa	189,059	71
Daura	224,884	85
Mashi	171,070	64
Danja	125,481	47
Sabuwa	140,679	54
Total	**1,018,608**	**384**

The formula used above is explained as:

$$\frac{X}{Y} X\, n$$

Where x = number of the sample

N = population of the local government

x = total population of the governments

3.5 Unit of Analysis

Unit of analysis refers to subject matter of the study in terms of focal area of analysis, it is the main object that is being analyzed in a study such as what, or who, that is being studied (Creswell, 2017). Most research across social sciences is typical of three types of unit of analysis, groups, social organizations, program, social artifacts, and individuals (Kumar, et al., 2013; Creswell, 2017). The unit of analysis for this research are the individuals who reside in rural areas of Katsina State Nigeria.

3.6 Measurements of Constructs/Variables

This research work has six major constructs to be measured. These are namely, rural development indices (poverty, employment, self-employment, and agricultural productivity, healthcare) as the dependent variables (DV), education infrastructure as the independent variable (IV), and NGOs as the moderator (MV). Besides the construct, five demographic variables were used in this study. These includes religion, race, gender, age, educational qualification, and occupation of the respondents. Categorical scale was employed to measure the demographic variables. Dichotomous scale of male and female

was employed to assess gender. Age was assessed using five scales, and educational level was assessed using six categorical scale as well.

3.6.1 Poverty

Poverty is defined as inability or lack of capacity to income and earnings, it is also defined as lack of access to productive activities and essential social services (Kankwenda, 2002). The World Bank $1.90 per day has been the standard used in comparing poverty level among nations across the world. The measurement instrument used by this study in assessing the poverty index of rural development was originally adapted from the works of Seth, (2006), Schneider, (2011), Alkire & Santos, (2014), however, the measurement was modified to suit this study. The selected items indicators are indicated in table 3.3 and were rated on a five-point rating scale of 1= Strongly disagree to 5=Strongly agree.

Table 3. 3

Poverty measurement

S/N	Items	Source(s)
1	1 dollar per day	Seth, (2006), Schneider,
2	Income is not sufficient t	(2011), Fosu (2011),
3	Three square meals daily	Arndt (2012),
4	Children school fees	
5	Dung/Wood to cook	
6	Coal to cook	
7	Cooker to cook	Gradin (2011)
8	Own a radio	Alkire (2010) Santos
9	A TV set	(2014)
10	A cell-phone	Gutberlet (2008)
11	A bike	
12	A motorbike	
13	A refrigerator	
14	A car	

3.6.2 Employment

Employment is defined as a professional engagement in any occupation, industries trade, business, or professional office vocation. It is a contractual agreement whereby a person does work or perform services for another for an exchange of monetary incentives (Fraser, 1992). The measurement is adapted from Stein 1967; Bloom, 1999; Halchuk, 2006). The selected items, as shown in the table below 3.4 were rated on a five-point rating scale of 1= strongly disagree to 5=strongly agree.

Table 3. 4

Employment measurement

S/N	Items	Source(s)
1	Full-time worker	Stein (1967)
2	Part-Time worker	Bloom ,(1999)
3	Managerial worker	Joseph (2001)
4	Professional worker	Denniss (2001)
5	Construction worker	
6	Clerical worker	
7	Craftsman	Halchuk (2006)
8	Driver	Kornfeld&Bloom (1999)
9	Agriculture	Rowthorn (1992)
10	Mining	Hotz (2002)
11	Construction	
12	Transport	
13	Manufacturing	
14	Labourer	
15	Technician	

3.6.3 Self-employment

Self-Employ is defined as any job that comprises all enterprises in the informal sector, or persons who is employed in the informal sector (Hussmann, 2005). The instrument used

for measuring the self-employment was adapted from Hotz (2002), Kornfeld & Bloom (1999), Stein (1967). However, the selected items as shown in the table 3.5 below, have being rated on a five-point rating scale of 1= Strongly disagree to 5=Strongly agree.

Table 3. 5

Self-employment measurement

S/N	Items	Source(s)
1	Self-employed manager	Stein (1967)
2	Self-employed technician	Kornfeld & Bloom,(1999)
3	Self-employed salesman	Joseph (2001)
4	Self-employ craftsman	
5	Self-employ administrative support	Denniss (2001)
6	Self-employed technician	
7	Self-employ driver	Halchuk (2006)
8	Self- employ in agriculture	Rowthorn(1992)
9	Self- employ in mining	Hotz (2002)
10	Self- employ in construction	
11	Self- employ in transport	Kornfeld &Bloom(1999)
12	Self- employ in manufacturing	
13	Self-employ as a labourer	

3.6.4. Agricultural productivity

Agriculture is defined as the production, processing and marketing of food, fibres, and other farm related products for consumption (Newby, 1983). The construct was adapted from (Walter, 2003; Knickel, 2009, & Schneider 2011). The selected items as shown in the table 3.6 below, were rated on a five-point rating scale of 1= strongly disagree to 5=strongly agree.

Table 3.6

Agricultural Productivity Measurement

S/N	Items	Source(s)
1	Livestock	Walter, (2003),
2	Enough fertilizer to apply in my farm	Knickel,(2009)
3	Pesticide for my crop	Brinkerhoff (1990)
4	Capital to boost my farm	
5	Extension service coaching	
6	Subsistent farmer	
7	Commercial farmer	Schneider (2011),
8	Energy to use in my farm	Casley (1982)
9	Modern agric implement	
10	Real estate	
11	An acre of land	

3.6.5 Healthcare

Health has been defined health as a complete state of physical, mental and social well-being, and not merely absent of disease and infirmity (Marion, 2013). The instrument was adapted from the works of (Torrance, 1986; Dreze & Santos, 2011; Cairney, 2014) and it contains the following measurable items as shown in table 3.7 below. All the adapted items were rated on a five-point rating scale of 1= Strongly disagree to 5=Strongly agree.

Table 3.7

Healthcare Measurement

S/N	Items	Source(s)
1	Terminal disease	Torrance, (1986),
2	Malnourished	Dreze & Santos (2011)
3	Die early	Dolan (2000)
4	Immunization	
5	Sanitatio	
6	Portable water	
7	Hospital	Jaechke (1989),
8	Referral services	Patrick (1990)
9	Drug	Cairney (2014)
10	Distance	
11	Ambulance	
12	Condition of facilities	
13	Medical personnel	
14	Modern equipment	

3.6.6 Education infrastructure

Education infrastructure is defined broadly to include all the enabling facilities that facilitate dissemination of knowledge and skills, such as the school building, library, workshop, classes, furniture, electricity, laboratories, water points and playing grounds (Gershberg, 2014). The original measures have been adapted from (Shavelson, 1991; UNESCO, 2015; OECD, 2012; Salau, 2012) as indicated in table 3.8 below, and the variable is assessed using a five-point rating scale of 1= strongly disagree to 5=strongly agree.

Table 3.8

Education Infrastructure Measurement

S/N	Items	Source(s)
1	School buildings	Murillo (2011),Unterhalter (2013)
2	School library	
3	Quality teachers	Gershberg (2014),UNESCO (2011)
4	Classes	
5	Workshop	Shavelso (1991),Murillo (2011)
6	Playing ground	
7	Furniture	
8	Electricity	
9	Water point	Jeanette (2000), Idialu (2013).
10	Teaching aids	

3.6.7 Non-Governmental Organizations - moderator

NGOs is defined as any non-profit making organization created primarily to serve as an alternative to government and profit making organization in terms of service delivery. The construct was adapted from the works of (Lewis, 2010; Ullah &Routray 2007; Parveen, 2009; Bryce, 2010; Abdel-kader (2011; Bright, 2013), and the selected indicators were assessed using a five-point rating scale of 1= strongly disagree to 5=strongly agree as indicated in table 3.9 below.

Table 3.9

Non-Governmental Organizations Measurement

S/N	Items	Source(s)
1	local NGO	Huq (1998)
2	Foreign NGOs	Wagle (1990), Lewis (2010)
3	Religious NGOs	
4	Development partners	
5	Provision of services	
6	Self-reliance	Kelly (2004)
7	Empowerment	Jepson (2005), Lewis (2010)
8	Agricultural productivity	
9	Job generation	Beamon (2008)
10	Health status	Abdel-kader (2011).
11	Clinic construction	Ullah & Routray (2007)
12	Activities	Parveen (2009)
13	Rural development effort	Bryce (2010),Bright (2013).
14	School construction	

Table 3.10

Summary of Measurement and Their Sources

S/No	Construct	Indices	No of Items	Sources
1	**Rural Development**		64	
	I	Poverty	14	Kankwenda, (2002),Seth (2006), Schneider 2011, Fosu (2011), Arndt (2012), Gutberlet (2008).
	II	Self-employment	10	John (2001), Bekker, (1995), & Hamilton (2000)
	III	Agricultural productivity	11	Walter, 2003; Knickel, 2009, & Schneider (2011)
	IV	Employment	15	Stein (1967); Bloom, (1999); Halchuk, (2006)
	V	Health	14	Torrance, 1986; Dreze & Santos, 2011; Cairney, 2014)
2	**Education Infrastructure**		10	Shavelson, (1991); UNESCO, (2015); OECD (2012)

3	**NGOs**	14	Ullah & Routray 2007; Parveen, 2009; Bryce, 2010; Abdel-kader (2011).

3.7 Method of Data Analysis

SPSS statistical package (Version 23) was employed in analyzing the primary data extracted from the questionnaires. Regression analysis was employed by this study in determining the relationship between the independent variable, dependent and the intervening variables of the study. Although, the use of PLS-SEM has been accelerated in recent time by different disciplines, this was credited to the model ability in handling multiple analysis simultaneously (Ragin, 2014). However, going by the principle of parsimony which suggest that, researchers should avoid using complex model was largely the reason why this study adopted SPSS as a model for analysis (Sekeran, 2016). Another reason why this study adopted SPSS was that, SPSS is the mother of all these packages, and when it comes to testing biases SPSS is the only package that does that analysis. Similarly, normality of data analysis is only performed by SPSS package (Bhatti, 2015; Creswell, 016). Besides the above reasons, SPSS is most suitable tool in presenting data in graphical form which is more scientific and easier for a reader to understand (Bhatti, 2015).

3.7.1 Cleaning and screening of data

After data collection, the data was screened and checked to detect missing value and the cases of outliers (Bhartt, 2015). Frequency analysis was runed to check and screen the data. All values that fall outside the specified range or wrongly coded were deleted. The

test for frequency analysis was runed for every variable to find if there are any cases of missing responses or values.

3.7.2 Descriptive analysis

Before the commencement of any statistical analysis, it is very imperative to ensure that all assumptions meant for the test are satisfied. Descriptive analysis usually involves the statistical analysis of mean, standard deviation, skewness, and range score analysis (Dillman, 2000; Bhartti, 2015). This study presents the primary data using the descriptive method in the form of table or chart.

3.7.3 Measure of goodness

According to Sekaran (2013), an application of a good instrument guarantees more accurate results which in turn validates the reliability and quality of the measurement adapted. This study employ instrument that were previously tested and used by other researchers on some of the variables. To conduct factor analysis, the sample size has to be at least around 300 cases, with 5 respondents, each per variable under study. However, De Winter (2013) has classified sample size of 50 as very poor, 100 as poor, 200 as fair, 300 as good, 500 as very good and 1000 as excellent. Hence, having a sample size of 434, this study had met the requirement. Thereafter, principal component analysis (PCA), which assists in determining the correlation of the construct was also conducted. However, factor analysis is appropriate only when all the items correlation coefficient, were at least 0.3, and Bartlett's sphericity is at $p<0.05$, and MKO is between 0.5, 0.6, 0.7, 0.8 and 0.9 as the case may be (Hutcheson &Sofroniou1999).

3.8 Validity and Reliability Analysis

Validity refer to the accuracy of an instrument in measuring what it is supposed to measure in a quantitative study, while reliability refer to the consistency of instrument across items, time and across researchers (Creswell, 2017). Upon finishing the data collection process, before delving into regression analysis, normality assumption must be met, especially for those using SPSS package as a model for data analysis. There are several methods of determining the validity and reliability of an instrument. Among the common methods of assessing validity of an instrument are through, content, construct, and criterion validity. This study conducted both content, construct, and criterion validity in order to ensure that the data is normal before further analysis is carry on. On the other hand, reliability is assessed through correlation analysis where the Cronbh Apha is used to determine the reliability of the instrument (Creswell, 2017).

3.8.1 Content validity

Content validity or sometimes called face validity is conducted to ensure that, the measurement instrument duly represent the concept or what it was meant to measure. A good content validity ensures that all the questions asked in the instrument are related to the research questions and hypotheses. As suggested by Asika (2010) there are two ways of assessing content validity of a measure which are:

i. By ensuring that, the items in the questionnaire duly represent the construct.
ii. By given out, the questionnaire to senior academicians to screen and vet the questions in the questionnaire in line with the objective of study.

This study employs both methods in ensuring the content validity of the measurement instrument. Firstly, the questions were adapted from the literature to suit the study, and secondly, three senior lecturers one from UUM and two ABU were given the questionnaire and they vetted the questions therein objectively.

3.8.2 Convergent validity

The assumption of convergent validity relates to a situation where two measures of construct that supposed to be related theoretically are indeed related. Both convergent validity, and discriminant validity of a measure are used to test construct validity and they can be tested using the average variance extracted (AVE) method developed by Fornell and Larker (1981). To achieve convergent validity, the AVE result of the test must be at least 0.50.

3.8.3 Discriminant validity

According to Garson (2007), discriminant validity is another validity analysis which ensures that, the construct's indicators are not correlated with other constructs to avoid measuring same thing. While discriminant validity statistically test whether two constructs differs among themselves to avoid predicting the same thing, convergent validity analyzes the internal consistency within one construct as Cronbach's Alpha does. Discriminant validity can be analyzed by conducting correlation test, factor analysis, or by multi-method correlation analysis test (Sekaran, 2013).

3.8.4 Criterion validity

A criterion or concrete validity refer to the degree to which a measure is related to an outcome of relationship or findings. Criterion validity refers to the ability or power of the

measurement in differentiating between two different individuals. Criterion validity measures the predictive ability of an instrument in relation to other past and present validated instrument.

3.8.5 Reliability

Reliability is the degree upon which there is consistency between independent measurements of the same phenomenon. In other words, reliability is the extent to which an instrument consistently measures what it intends to measure accurately, without bias within time and between various items in the instrument (Asika, 2010). To test for internal consistency of the instrument, this study adopted the Cronbach's Alpha coefficient as the tool for assessing the internal consistency and reliability of the instruments.

3.9 Multiple Regressions Analysis

Regression is a statistical tool that allow researcher to establish relationship between two or more variables, it indicates the influence of one or more independent variable on the dependent variable (Sekeran, 2016). Regression analysis is used for time series modelling, cause-effect relationship, and forecast (Etika, 2017). Although, there are numerous forms of regression, the most commonly used are linear regression and logistic regression.

Before conducting multiple regression analysis, a few of statistical assumptions must be met such as homoscedasticity and multicollinearity before one can embark on regression analysis (Bhatti, 2015). Multiple regression analysis was performed to verify the link between educational infrastructure the independent variable, and rural development the dependent, and NGOs which is the the moderating variable

3.9.1 Analysis for hierarchical regression

Hierarchical regression was conducted to establish relationship between the independent variable (education infrastructure) and the dependent variable rural development (poverty, employment, and agricultural productivity, healthcare) and the moderating variable NGOs as well.

3.9.2 Normality

Before regression analysis is carry out, the data must be normal. This is a pre-requisite for conducting inferential statistics techniques. A few different ways to explore these assumptions are made available, either graphically, or statistically. This includes, histogram, bar chart, probability plot, skewness or kurtosis.

3.9.3 Linearity

Linearity refers to relationship between two variables which must be linear. This indicate the of direction of the relation between the variable s under study (Tabachnich &Fidell, 2007). Multicollinearity and homoscedasticity are frequently used in determining the course of direction and the extent of the relationships among the variables (independent, dependent, and intervening).

3.9.4 Multicollinearity

When the correlation among independent variables are high, then problem of singularity and multicollinearity is said to exist among the variables (Bhatti, 2015). There are few ways of assessing multicollinearity of the independent variable which is through the correlation matrix of the independent variables. However, some scholars consider the correlation of 0.7 and above as high, while others consider 0.8 as having multicollinearity

problem, and for others, 0.9 is said to be highly correlated (Hair *et al.*2010). As for this study, the independent variable is just one variable, and therefore, the issue of multicollinearity does arise.

3.9.5 Homoscedasticity

The basis of this assumption is that, the relationship between the covariance and dependent variable in one group should be the same as the relationship in other group (Hair, et al 2010). Homoscedasticity or homogeneity of variance is used in describing simple linear regression relationship to avoid bias in the least-squares estimators in the population.

3.10 Pilot study

Pilot study can be described as a preliminaries study that are often carried out on a small scale to ascertain the reliability and validity of an instrument before embarking on the full-scale study. It is conducted to evaluate the variability and adverse event, so that a corrective measure can be taken in order to adjust the instrument before embarking on the full-scale study.

In order to conduct a pilot study, the sample size must be determined. The sample should be from 15 respondents to 100 respondents, depending on the nature of the study (Sekeran, 2016). As for this study, after administering and retrieving the questionnaires, SPSS version 23 was used in running the analysis and the result obtained from the analysis indicates that the reliability values of the instrument ranges from 0.633 to 0.945, which is a sign of high reliability (Hair et al., 2010). (See Table 3.10)

Table 3.11

Summary of total number of items and their reliability coefficient

Construct	Number of items	Reliability
Poverty	14	.0723
Employment	15	.0633
Self-employment	15	0.655
Agricultural productivity	14	0.833
Healthcare	14	0.888
Education infrastructure	10	0.945
NGOs	14	0.927

Sources: Researcher

From the pilot study result, the Cronbach's alpha value ranges between 0.63 to 0.90. This shows that the instrument has met the required benchmark of 0.60 as the minimum acceptable value, and the constructs were found to be reliable. Similarly, the content validity of the instrument was assessed by experts to ascertain the suitability of the items in measuring the constructs. Based on this, a draft of these instruments was given to the expert at the School of Government, University Utara Malaysia, for their observation and correction. Additionally, two visiting lecturers of University Utara, Malaysia (UUM), who are from Nigeria were consulted to check the clarity of the instrument as they are familiar with the contextual settings of the study.

Finally, on the advice of the supervisor and one of my external examiners during my proposal defense Dr Nur Norlaila Chic Abdullahi, the construct (Self-employment) was removed, and some items were re-phrased so that the instrument can measure more appropriately what they were intended to measure. Subsequently, the researcher developed the enriched and revised version of the instrument, which was administered in the pilot study. A total of 35 copies of the questionnaire was administered to Nigerian community in UUM and the entire 35 copies was returned duly completed. The

administration of the questionnaire was done by the researcher personally and this allow the researcher to offered explanation to the respondents on items that needed further clarification. The administration and the retrieval of the questionnaire was started in mid September and was completed in October 2016.

Table 3.12

Modified research instrument and questionnaire items after pilot test

SN	Variable	Item code	Initial statement	Modified statement
1	Poverty	P1	I earned 1 dollar per day	I earned 300 naira per day
		P2	I used shrub to cook	I used dung/wood to cook
2	Employment	Em1	I am employed as a white collar	Professional worker
		Em2	I am employed as a blue collar staff	I am a construction worker
		Em3	I am a casual laborer	I am a laborer
3	Agricultural productivity	A1	I have enough live stock in my farm	I have live stock in my farm
		A2	I have enough capital to boost my farming	I have capital to my farming activities
		A3	Pesticide is being to supply to me to apply for my crop	I have pesticide for my crop
		A4	I produce in commercial quantity	I am a commercial farmer
		A5	I produce small quantity	I am a subsistence farmer
4	Healthcare	H1	People have terminal disease in your family	You have terminal disease
		H2	You missed immunization	Your child receives all the require number of immunization

From Table 3.11 it can be seen that some items which were initially in the questionnaire were modified while some were deleted as suggested by expert after the pilot study.

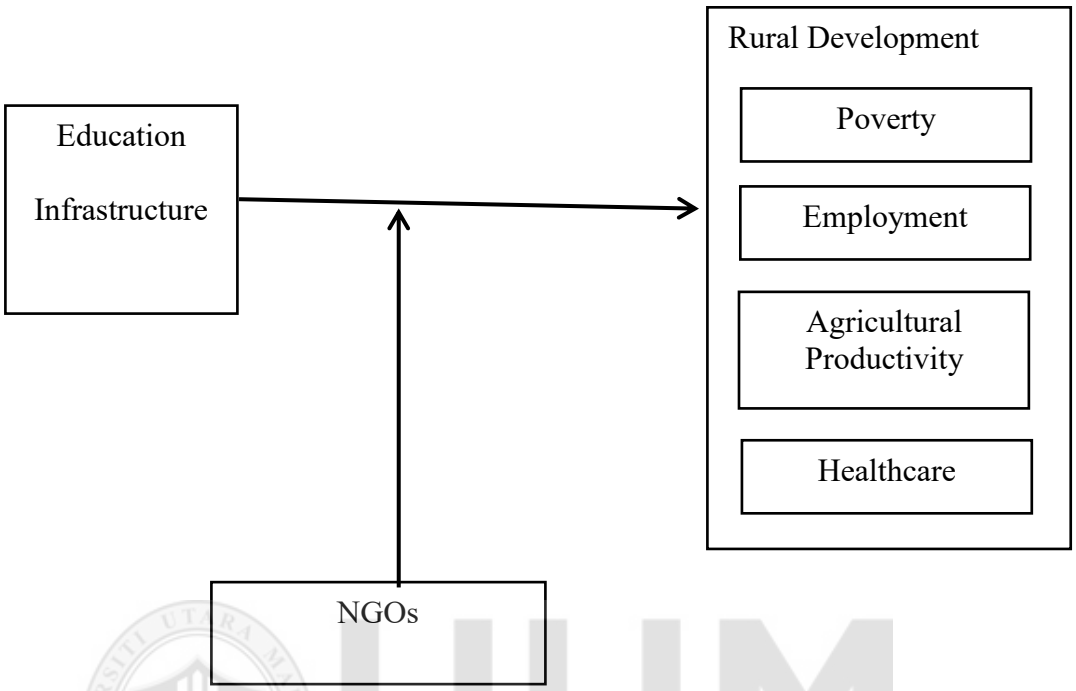

Figure 3.2: Modified research framework after the pilot tes*t*

From figure 3.2, it can be seen that one variable was removed from the initial construct or framework, as was explanind in the proceeding page, modification was suggested by an expert, that self-employment be removed as its very similar with employment, so it was removed, and the present construct has six variables.

3.11 Summary

This chapter had discussed the method adopted by this study, through the presentation of the research approach/design, population and sampling design, measurement instrument, layout of the questionnaire, and pilot testing. The chapter has also presented the pre-test procedures, and the techniques for data analysis. The next chapter discusses administration of questionnaire, descriptive statistics, normality analysis, reliability and validity of research instrument, and hypotheses testing.

CHAPTER FOUR

RESEARCH FINDINGS

4.1 Introduction

In this chapter, the objective of the study was provided as well as discussion on the research findings, the chapter also contains the data collection processes, questionnaire responses, data cleaning, outliers and missing values. The chapter also housed the basic assumption of multiple regression, measures of goodness analysis, such as reliability test and factor analysis. Descriptive analysis was also discussed in this chapter, which includes the respondent's profiles, mean and standard deviation respectively. Additionally, the chapter presents regression analysis for hypotheses testing, correlation test to determine relationship among the variables, and hierarchical regression for testing the moderating variable.

4.2 Data Collection process and questionnaires responses

According to 2006 Nigerian census, the population of Katsina State stood at 5,801,584 and was therefore, adopted as the population of this study. Hence, 434 questionnaires were distributed proportionally to the rural people in six local government areas of the State. These includes, Jibia 71, Batagarawa 81, Daura 96, Mashi 73, Danja 53, and Sabuwa 60 of Katsina State. (Refer to table 3.2)

The respondents were selected using the multi-stage and purposive sampling techniques. Therefore, the selection process starts from the three geo-political zones of the State. In each of the zone, two local governments were selected which completed the six local governments as was explained in table 3.2. In Katsina Zone, there were 11 local governments, Daura Zone has 12 local governments, while Funtua Zone has 11 local government areas. The initial sampling was 384 as was explained in table 3.2, but as suggested by Salkind (2012), more respondents can be added to the initial sampling to avoid under-sampling and minimize the issue of non-bias. Therefore, based on the above assertion, this study has added 50 respondents making the sampling to 434, and purposive tecniques was used in selecting the respondents at the final stage.

On the administration of the questionnaire, about 80 percent of the questionnaires were answered instantly, this was possible because the study utilizes Malis (public gathering where people in the rural areas gathers to discuss issues pertaining to politics and other aspect of their social life).Those that could not answer the questionnaire instantly were given between two to three days to complete their questionnaires. The researcher then made a follow up mainly through personal visitation to respondents in all the six local government areas. The administration of the questionnaires was started in the first week of January 2016, and the exercise was completed in March 2017.

Out of the 434 questionnaires that were distributed, a total of 410 respondents representing 95 percent have duly filled and returned the questionnaires from the selected six local government areas of the State. 95 percent rate of return as indicated in table 4.1 was enough for further analysis as it met the requirement based on Sekaran (2013), who says

that, 30 percent of response rate is suitable for a survey research. Additionally, as suggested by Pallant (2001) and Hair (2010), a sample size should be between 5 and 10 times the number of studied variables for regression analysis to be conducted. Hence, having 6 variables it implies that 60 respondents was adequate to serve as acceptable sample size for this study, thus, this study has met all the requirement for further analysis. Moreover, this study haven recorded 95 percent response rate and 400 useable responses has further met the necessary requirement for conducting multiple regression analysis.

Table 4.1

Responses Rate of the Questionnaires

Survey Area	Distributed	Returned	Percentage
Jibia	71	68	96
Batagarawa	81	75	93
Daura	96	88	92
Mashi	73	70	96
Danja	53	51	94
Sabuwa	60	58	97
Total	**434**	**410**	**95**

Source: Researcher

4.3 Data Cleaning

Data screening entails checking for errors in the data collected from the field. Literature has suggested that, it is important for researchers to check the data in order to verify if there are errors in the data collected (Pallant, 2007). Verifying the data is done to avoid committing an error when keying in the data into the system as any error committed might affect the data during the process of analysis. Checking the data would assist the researcher to be aware of some data that are out of range, and as such, make an adjustment before analyzing the data. This is because, out of range data may affect the results of some analysis, especially, the correlation analysis (Pallant, 2007). Prior to data screening, the

entire returned questionnaires were coded and enter into SPSS version 23. Subsequently, preliminary data analysis such as, missing value analysis, assessment of outliers, normality test, and multicollinearity test were conducted (Hair, Black, Babin & Anderson, 2010; Tabachnick &Fidell, 2007).

4.3.1Missing data

The questionnaires were administered by the researcher personally, the researcher immediately cross-checked the questionnaires to ensure that all questions were answered, and where there is an omission, the respondent was asked to complete the filling. This process has greatly resulted in reducing the number of unanswered questions. After running the descriptive analysis for the missing value, 2 missing values were detected and were replaced as suggested by Hair et al. (2010). However, when missing value was detected, the usual procedure for rectifying the problem was to conduct the mean substitute analysis as recommended by (Tabachnick&Fidell, 2013). Consequent upon this, and in line with the recommendation and having met the criteria for missing value acceptance range of which should be between 3 to 5 percent, this study replaced the 2 missing values that were found in the data set of the study using the substitutes method, and the result is shown in table 4.2 below

Table 4.2

Missing Value

Variable	Number of Missing Value
Poverty	1
Employment	1
Total	2
Percentage	0.4

Missing value is calculated by dividing the total number of missing value by total number of dataset multiplied by 100.

4.3.2Assessment of outliers

An outlier can be described as the observation or subset of observation which falls outside the normal range of the questionnaire, for example when a Likert scale of five options is used throughout a questionnaire, and it happens that, some responses were reading 6 or 7, this is an outlier, and it can distort the sresult. Outliers are responses that are far away from the remaining set of data of the study. In order to avoid the distortion of the result due to outlier, researchers are recommended to thoroughly check the data for detection of possible univariate and multivariate outliers (Hair, et al.,2014).

Two methods of detecting outlier were employed by this study in order to detect and fish out outlier. The first method was univariate analysis which was conducted using the standardize z-score value cut-off of + 3.29. p=0. 001 as suggested by Tabachnick and Fidell (2007), and the result of the analysis indicated that, there was no case of outlier in the data. The second method which was multivariate analysis, was also conducted to detect the outliers from the data set. Mahalanobis distance check was equally employed by this stuty in detecting the outliers, and the result indicates that, 10 outliers were out of range and were subsequently deleted from the data set to so as to run a reliable regression analysis. The cases that were detected and subsequently deleted were as follows 401,402,403,404,405,406,407,408,409 410. The result is presented in table 4.3 below

Table 4.3

Outlier Detected

Cases	Number
Gender	401
Educational Qualification	402
Ethnicity	403
Religion	404
Occupation	405
Marital Status	406
Number of family	407
Age	408
Poverty	409
Healthcare	410
Total	10

However, after checking the missing values, and conducting outlier analysis, the result indicated that 400 responses were cleaned for further analysis for the study.

4.3.3 Non-Responses Bias

Non-response bias can be described as the disparity in answers between those that responded to questionnaire on time, and those that responded lately, to know whether there is discrepancy between the two groups (Vink & Boomsma, 2008). To estimate the likelihood of non-response bias, this study had conducted a non-response bias test. As earlier mention, the administration of the questionnaire took three months to complete. Afterwards, the respondents were grouped into two independent samples, those that responded within the first month (early respondents), and those who responded afterward as (late respondents).

After conducting the t-test, each of the six constructs recorded a value that was greater than 0.5. This result indicates that, there were no significant differences between early and

late respondents. Hence, this indicates that, this study did not violate the assumption of equal variances between early respondents and late respondents. Besides, this study has achieved a response rate of 95 percent which is above the 50 percent minimum requirement as suggested by Pallant (2010), and this has proven that non-response bias was not an issue for this study as indicated in table 4.4 below.

Table 4.4

Independent sample t test

Variable	F Value	Sig
Poverty	.582	.446
Employment	.297	586
Agricultural Productivity	1.167	.281
Healthcare	.292	.589
Education Infrastructure	.807	.370
NGOs	2.909	.089

4.3.4 Common Method Variance

The common method variance (CMV) or mono-method bias can be defined as the variation in response which is caused by the error in the instrument rather than the predisposition of the respondent (Mackenzie & Podsakoff, 2012). In this regard, the instrument causes the biasness and by extension the variance. Consequently, the result is affected by pollution that stems from the biased instrument.

Harman's (1976) single-factor test is often used to address the issue of common method variance. This study conducted the Harman single-factor test and the result shows that four factors explained a cumulative of 80 percent of the variance with the first factor explaining 20 percent of the total variance, which is less was than 50 percent. Thus, no single factor has recorded the greatest part of the covariance as recommended by (Kumar,

2012; Podsakoff et al., 2012). As a result of this analysis, the issue of common method variance (CMV) does not seem to inflate the relationship between the variables measured in this study.

4.4 Respondents Profiles

In the questionnaire, the respondents were asked questions pertaining to their demographic information. This information includes gender, age, marital status, and educational level, family size, religion, ethnicity, and occupation. The descriptive analysis indicates that, males were the dominant gender in the study sample with 78 percent rate, this was in consonance with the 2006 census, which puts the male population above the female population.

On the age of the respondents, the most dominant age group among the respondents were those between 18 to 25 which represents 42 percent. However, this is contrary to what is obtained in the western world, where the rural population is mostly dominated by the old people. The reason for this disparity was that, most people in the rural areas in Africa married more than one wife, which has resulted in having many children. To the rural people in Africa generally, this is a source of wealth and pride to them. Furthermore, substantial number of Nigerian populations is made up of people from 18 to 26 years of age (NBS, 2015). Next on age distribution of the respondents are those between 26 and 33 age groups, followed by those in the categories of 34 to 41 age group, 42 to 49 age group, and finally, those above 50 years of age.

Similarly, in terms of marital status of the respondents, 108 respondents which was 27 percent were still single. The married ones were 248 respondents, representing 62 percent.

The divorcees were 36 respondents, which amount to 9 percent, while widows' respondents were 8 representing 2 percent. This analysis has shown that, most of the respondents were married men and women. This is an indication that, people in Katsina State married early. As for the educational attainment, respondents with Islamic education were 56 respondents representing 13 percent, while those without formal education were 52 respondent which amount to 12 percent of the entire sample. Primary school leavers were 48 respondents, which represent 12 percent, while those with secondary education were 148 respondents accounting for 37 percent of the sample. These categories of respondent were the most dominant group among the respondents. Respondents with NCE certificate were 52, which amount to 13 percent, while degree holders were 36 respondents amounting to 9 percent. Finally, those with postgraduate qualifications were 8 respondents, representing 2 percent.

The result of the descriptive analysis further indicated that, educational qualifications of the rural people under study shows that, most of the rural people were secondary school certificate holders, which represent 37 percent of the sample. Those with Islamic education represent 14 percent of the sample, while those with master's degree represent 2 percent of the sample. This distribution indicates that the educational attainment of rural people in Katsina State is very low. Consequently, with regards to the family size of the respondent. Those with 2 children and below were 146 respondents, representing 41 percent, while between 3 and 5 children were 108 respondents, representing 27 percent. Respondents with between 6 to 10 children were 68, representing 17 percent, while those within the range of 11 to 15, were 40 respondents, accounting for 10 percent, those with

family size of 16 and above were 20 respondents, which represent 5 percent of the entire respondents.

On religious variable, Muslims constituted the majority of respondent, haven 368 respondents, representing 92 percent, while Christian religion has 28 responses, account to 7 percent. Other religion has 4 respondents, which represents 1 percent.

In terms of the ethnic group of the respondents, Hausa constituted the majority haven 324 responses, representing 81 percent, while the Fulani were 56 respondents, which account for 14 percent, other ethnic groups has 20 respondent representing 5 percent. The major occupation of the rural people is farming. Hence, 108 respondents, which represent 27 percent were farmers. The civil servants were 102 respondents, representing 25 percent, while those that engages in business were 52 respondents, representing 13 percent, those working as private company employees' amount to 77 respondents representing 19.3 percent. The number of self-employed were 32 respondents, representing 8 percent, and finally, the unemployed respondents were 32 respondents representing 8 percent.

Table 4.5

Respondents profiles

Demography	Indicators	Frequency	Percentage
Gender	Male	312	78
	Female	88	22
Age	18-25	171	42.8
	26-33	120	30
	34-41	69	17.3
	42-49	4	1
	50 and above	36	9
Marital Status	Single	108	27
	Married	248	62
	Divorce	36	9
	Widow	8	2

Edu. Qualification	Islamic School	56	14
	No Schooling	52	13
	Primary	48	12
	Secondary	148	37
	NCE & Equivalent	52	13
	Degree	36	9
	Postgraduate	8	2
Family Size	1-2 Children	164	41
	3-5 Children	108	27
	6-10 Children	68	17
	11-15 Children	40	10
	16 Children & above	20	5
Religion	Islam	368	92
	Christianity	28	7
	Others	4	1
Ethnicity	Hausa	324	81
	Fulani	56	14
	Others	20	5
Occupation	Farming	108	27
	Civil Servant	102	25.5
	Businessman	29	7.3
	Private company staff	52	13
	Self-employed	77	19.3
	Unemployed	32	8

4.5 Descriptive Statistics of the Variables under Study

Descriptive statistics is a means by which a set of data or information is summarized that could either be a presentative of the total population or segment of it. Descriptive statistics is built around central tendency, spread or measure of variability (Sekaran, 2013).

4.5.1 Standard deviation, frequency and percentage

The most commonly used measure of central tendency is the frequency and percentage which shows the frequency and percentage of a given response to a statement. Therefore, the six variables used in this study were represented in terms of frequency, percentage, means and standard deviation as indicated in table 4.3

4.5.2 Poverty

The instrument used for measuring poverty in this study are 14 items. The frequency, percentage, mean, and standard deviation of the respondent's responses were shown in table 4.3. Item 1, "earned less than 300 naira per day", shows that 71 percent of the respondents earned less than 300 naira per day which is below 1 dollar per day. This indicates that, majority of the rural people were surviving on less a dollar per day, which is below the poverty line. This result is consistent with reports by NBS (2015), which puts Nigerian poverty rate at 70 percent. Item 2, "income is not sufficient to cater for need", shows that 81 percent of the respondents cannot cater for their basic needs, which is an indication of prevalence of poverty in the rural areas. Item 3, "can't afford three square meals daily", shows that 80 percent of the respondent cannot afford three square meal a day, this revealed the extent of poverty which is high among the rural people. The high rate of poverty as indicated by the result was an indication of lack of infrastructural facilities in the rural areas which result to incapacitation of the rural people in terms skills necessary for employment.

Additionally, item 4, "can't afford my children school fees", indicates that 70 percent of the respondents cannot pay for their children school fees. This result revealed the extent

of lack of formidable source of income for the rural people. This is an indication of high level of poverty. Item 5, “use dung/wood to cook”, shows that 53 percent of the respondents used dung/wood to cook their food, which is an indication of low level of income, and by extension, it indicates the extent of poverty level among the rural populace. Item 6, “use coal to cook”, shows that 51 percent of the respondents disagree that they used coal to cook which means that they could not afford it due to poverty.

Item 7, states that “use cooker to cook”. The response showed that, 81 percent of the respondents disagree with the statement. Meaning that, they used other means to cook their food. Item 8, states that “don’t own a radio”. This shows that, 53 percent of the respondents disagree. This invariably means that, 53 percent of the respondents owned a radio. Item 9, “don’t own a TV”, shows that, 56 percent of the respondents disagree with the statement which means that, 56 percent of the respondents owned a television set. Item 10, “don’t own a cell-phone”, shows that, 49 percent of the respondents disagree with this statement which means that, 49 percent of the respondents owned a cell-phone.

Furthermore, item 11, “don’t own a bike”, shows that, 55 percent of the respondent owned a bike, meaning that, they did not agree with the statement. Item 12, don’t own a motorbike, shows that, 53 percent of the respondent disagree with the statement as they opined that, they owned a motorbike. Item 13, “don’t own a refrigerator”, shows that, 56 percent of the respondents disagree with the statement. This indicate that, 56 percent of the respondent did not have refrigerator. Item 14, “don’t own a car”, shows that, 80 of the respondents agree that they do not have a car. Thus, we have deduced from this result that, majority of the rural people are plague by poverty as indicated by item 1 and 2. In addition,

the situation of low income could be attributed to lack of infrastructural facilities such as school which could have in turn develop the human potentials of the rural people.

Table 4.6

Standard Deviation, frequency and percentage of Poverty

Item	Description	SD	Frequency	Percentage
1	Earn less than 300 naira per day	2.79	284	71
2	Income is not sufficient to cater for need	1.435	324	81
3	Can't afford three square meals daily	1.474	320	80
4	Can't afford my children school fees	1.386	280	70
5	Use Dung/Wood to cook	1.163	212	53
6	Use coal to cook	1.100	204	51
7	Use cooker to cook	.838	324	81
8	Don't own a radio	1.227	212	53
9	Don't own a TV	1.232	224	56
10	Don't own a cell-phone	1.347	196	49
11	Don't own a bike	1.421	220	55
12	Don't own a motorbike	1.372	212	53
13	Don't own a refrigerator	1.423	224	56
14	Don't own a car	1.463	320	80

Source: Researcher

4.5.3 Employment

Employment is represented by 15 items, and the frequency, percentage, mean and standard deviation were shown in table 5.4. Item 1, "full-time worker, shows that, 71 percent of the respondents opined that, they are full-time workers, either as public servant or self-employed. It is clear that, the full-time employment rate is 71 percent, it is also evident that, a lot of them were on menial job. Item 2, "part-time worker", shows that, 81 percent of the respondents were on temporary employment. Item 3, "managerial worker", shows that, 80 percent of the respondents were not on managerial job.

Furthermore, the following could however, be linked to the low level of educational attainment. Item 4, "professional worker", which indicates that, 70 percent of the

respondents were not professional workers. Item 5,"Im a construction worker", shows that, 53 percent of the respondents were not construction workers. Item 6, "clerical worker", shows that, 51 percent of the respondents disagree that, they are clerical workers.

Furthermore, item 7, "craftsman", indicates that, 81 percent of the respondents disagreed with the statement meaning that, they are not craftsman. Item 8, "driver", indicates that, 53 percent of the respondents disagree with the statement that, they are drivers. Item 9, self- employ in agriculture", indicate that, 56 percent of the respondents disagree with the statement. Item 10, "self- employ in mining", indicates that, 49 percent of the respondents disagree with the statement.

Item 11, self- employ in construction", indicates that, 55 percent of the respondent disagrees with the statement. Item 12, "self- employ in transport", shows that, 53 percent of the respondents disagree with the statement. Item 13, "self- employ in manufacturing", shows that, 56 percent of the respondents disagree with the statement. Item 14, "self-employ as a labourer", shows that, 49 of the respondents disagree with the statement. Item 15, "self-employ as a technician", shows that, the respondents disagree with the statement as shown by 55 percent of the respondents.

Thus, what is deduced from this result was that, even though, majority of the respondents were employed in one area or the other, that did not get them out of poverty, this is because what is given to them as a wage is not enough to cater for their basic needs.

Table 4.7

Standard Deviation, frequency and percentage of Employment

Item	Description	SD	Frequency	Percentage
1	Full-time worker	1.622	284	71
2	Part-Time worker	1.221	324	81
3	Managerial worker	1.086	320	80
4	Professional worker	1.315	280	70
5	Construction worker	1.221	212	53
6	Clerical worker	.821	204	51
7	Craftsman	.853	324	81
8	Driver	.912	212	53
9	Self- employ in agriculture	.866	224	56
10	Self- employ in mining	.861	196	49
11	Self- employ in construction	1.080	220	55
12	Self- employ in transport	1.093	212	53
13	Self- employ in manufacturing	1.105	224	56
14	Self-employ as a labourer	1.005	196	49
15	Self-employ as a Technician	1.240	220	55

Source: Researcher

4.5.4 Agriculture

Agricultural productivity is represented by 11 items, and the frequency, percentage, mean and standard deviation were shown in table 4.5. Item 1, "Livestock", shows that, 55 percent of disagree with the statement, as they the opined that, they do not have livestock in their farms. Item 2, "enough fertilizer to apply in my farm", shows that, 81 percent of the respondents disagree with the statement as they do not have enough fertilizer for their farms. Item 3, "pesticide for my crop", shows that, 80 percent of the respondents did not agree with the statement as most farmers lack the financial ability to buy pesticide for their crops, and the government subsidize one is hard to get.

Item 4, "capital to boost my farm", this shows that, 70 percent of the respondents do not have capital to boost their farming activities. This could be the reason why most farmers in the rural areas are subsistence farmer because of insufficient capital to boost the farming

profession. Item 5, “used to attend extension service coaching”, shows that, 53 percent of the respondents use to attend extension service coaching. Item 6, “subsistence farmer”, shows that, 51 percent of the respondents agree that are subsistence farmers. Item 7, “commercial farmer”, shows that, 81 percent of the respondents disagree with the statement, meaning that they are not commercial farmers. Item 8, “energy to use in my farm”, shows that, 53 percent of the respondents agree with the statement that, they have energy in my farm. Item 9, “I have modern agric implement that I use in my farm”, shows that, 56 percent of the respondents agree with the statement. Item 10, “real estate in my farm”, shows that, 49 percent of the respondents agree with the statement. Item 11, “an acre of land”, shows that, 55 percent of the respondent agrees with the statement.

Thus, what was deduced from this result was that, majority of the respondents employed primitive method of farming, leading to low agricultural productivity, and by extension low income.

Table 4.8

Standard Deviation of Agriculture

Item	Description	SD	Frequency	Percentage
1	Livestock	1.328	220	55
2	Enough fertilizer	1.030	324	81
3	Pesticide	1.064	320	80
4	Capital	1.126	280	70
5	Extension service coaching	1.243	212	53
6	Subsistent	1.218	204	51
7	Commercial	1.060	324	81
8	Energy	1.214	212	53
9	Modern agric implement	1.229	224	56
10	Real estate	1.353	190	49
11	An acre of land	1.378	220	55

Source: Researcher

4.5.5 Healthcare

Healthcare is measured by 14 items, and the frequency, percentage, mean and standard deviation were shown in table 5.6. Item 1, “terminal disease”, shows that, 71 percent of the respondents disagree with the statement as they opined that, they do not have terminal disease. Item 2, “malnourished, the responses shows that, 81 percent of the respondents disagree with the statement that, their child were malnourished. Item 3, “die early”, shows that, 80 percent of the respondents did not agree with the statement. Item 4, “immunization”, the responses shows that, 70 percent of the respondents agree with the statement that, their child received the require immunization.

Consistently, item 5, “sanitation services”, the responses show that, 53 percent of the respondents agreed with the statement. Item 6, “portable water”, the responses shows that, 51percent of the respondents agree with the statement that, they have access to portable water. Item 7, “hospital”, the responses shows that, 81 percent of the respondents agreed with the statement, meaning that, they do have a hospital in their area.

Item 8, “referral services”, the responses shows that, 53 percent of the respondents agree with the statement that, they do have provision for a referral service in their area. Item 9,“ drug” shows that, 56 percent of the respondents disagree with the statement that, they didn’t have drug in their hospital. Item 10, “distance”, the response shows that, 49 percent of the respondents disagree with the statement which means that, they are not far away from the hospital. Item 11, “ambulance”, the responses shows that, 55 percent of the respondents disagree with the statement which means that ambulance is not always available. Item 12, “condition of facilities”, the responses indicate that, 53 percent of the

respondents disagree with the statement which means that, some of the facilities were in a deplorable condition. Item 13, “medical personnel”, the responses indicated that, 65 percent of the respondents disagree with the statement which means that, some of the personnel were not competent.

Item 14, “modern equipment”, the responses indicated that, 49 percent of the respondents disagree with the statement, which means that, most hospitals in the rural areas lack modern equipment. From this analysis it was revealed that, healthcare services in the rural areas is poor and this is in line with the NBS (2015) survey which revealed that, most hospitals in the rural areas are in a deplorable condition and has led to the poor healthcare services. This could be the reason why life expectancy in the rural areas is low when compare with the urban centers.

Table4.9

Standard Deviation of Healthcare

Item	Description	SD	Frequency	Percentage
1	Terminal disease	1.328	284	71
2	Malnourished	1.030	324	81
3	Die early	1.064	320	80
4	Immunization	1.126	280	70
5	Sanitation	1.243	212	53
6	Portable water	1.218	204	51
7	Hospital	1.060	324	81
8	Referral services	1.214	212	53
9	Drug	1.229	224	56
10	Hospital	1.353	196	49
11	Ambulance	1.378	220	56
12	Condition of healthcare facilities	1.214	212	53
13	Medical personnel	1.229	224	56
14	Modern equipment	1.353	196	49

Source: Researcher

4.5.6 Education Infrastructure

Education infrastructure is measurement by 10 items, and the frequency, percentage, mean and standard deviation were shown in table 4.7. Item 1, "school building", the responses shows that, 83 percent of the respondents agreed with the statement. Item 2, "school library", the responses shows that, 88 percent of the respondents agreed with the statement.

Item 3, "quality teachers", the responses shows that, 88 percent of the respondents agree with the statement. Item 4, "classes", the responses shows that, 89 percent of the respondents agreed with the statement. Item 5, "workshop", the responses shows that, 89 percent of the respondents agreed with the statement. Item 6, "playing ground", the responses shows that, 90 percent of the respondents agreed with the statement. Item 7, "furniture", the responses shows that, 93 percent of the respondents agreed with the statement.

Item 8, "electricity", the responses shows that, 92 percent of the respondents agree with the statement. Item 9, "water point", shows that, 90 percent of the respondents disagree with this statement. Item 10, "teaching aids", the response shows that, 89 percent of the respondents agree with the statement.

Table 4.10

Standard Deviation of Education Infrastructure

Item	Description	SD	Frequency	Percentage
1	School building	1.093	332	83
2	library	1.006	352	88
3	Quality teacher	.974	312	88
4	Classes	1.087	315	89
5	Workshop	1.041	356	89

6	Playing ground	.997	263	90
7	Furniture	.910	263	93
8	Electricity	.953	368	92
9	Water point	.958	360	90
10	Teaching aids .	1.027	356	89

Source: Researcher

4.5.7 Non-governmental Organizations

NGOs is represented by 14 items, and the frequency, percentage, mean and standard deviation were shown in table 5.8. Item 1, "local NGOs", the responses shows that, 75 percent of the respondents agreed with the statement. Item 2, "foreign NGOs", the responses shows that, 78.3 percent of the respondents agree with the statement.

Item 3, "religious NGOs", the responses shows that, 66 percent of the respondents agree with the statement. Item 4, "development partners" the responses shows that, 83 percent of the respondents agree with the statement. Item 5, "provision of services", the responses shows that, 79 percent of the respondents agreed with the statement. Item 6, "self-reliance", the responses shows that, 81 percent of the respondents agree with the statement. Item 7, "empowerment" through training, the responses shows that, 84 percent of the respondents agree with the statement.

Item 8, "agricultural productivity", the responses shows that, 81 percent of the respondents agree with the statement. Item 9, "job creation" the responses shows that, 82 percent of the respondents disagree with this statement. Item 10, "NGOs help in improving health status through their services in my area", the response shows that, 81 percent of the respondents agreed with the statement. Item 11, "clinic construction", the responses indicated that, 79 percent of the respondents agree with the statement. Item 12, "activities

impact", the responses shows that, 83 percent of the respondents agreed with the statement. Item 13, "rural development", the responses indicated that, 78 percent of the respondents agree with the statement. Item 14, "school construction", the responses indicated that, 68 percent of the respondents agree with the statement. It is evidence from this result that, NGOs were perceived as rural development partners.

Table 4.11

Standard Deviation of NGOs

Item	Description	SD	Frequency	Percentage
1	Local NGOs	1.197	300	75
2	Foreign NGOs	1.129	313	78.3
3	Religious NGOs	1.294	264	66
4	Development partners.	1.131	332	83
5	Provision of services	1.105	316	79
6	Self-reliance	1.126	324	81
7	Empowerment	1.043	336	84
8	Agricultural productivity	1.197	324	81
9	Job creation	1.090	328	82
10	Health status	1.217	324	81
11	Clinic construction	1.142	316	79
12	Activities impact	1.145	332	83
13	Rural development	1.121	312	78
14	School construction	1.286	272	68

Source: Researcher

4.6 Regression Analysis Assumption

The first step before conducting multiple regression analysis after data were collected and coded is to, ensure that the data is normalized by conducting normality test, such as linearity, multicollinearity and homoscedasticity analysis so as to satisfy and meet the requirement for conducting regression analysis as suggested by Hair et al. (2010).

4.6.1 Normality

One for the requirement for regression analysis is that, the data must be normal before any analysis can be carry on. According to Tabachnick and Fidell, (2007), there are two methods for checking the normality of data, which are most frequently used by researchers. These are histogram, and skewness and kurtosis. As for the histogram test, when all the bars fall within the curved area, normality is achieved, but when some of the bars are outside the curved area, then there is an issue of normality. While for the skewness and kurtosis, when all the values are close to zero, the data is said to be normal. In this present study, both the histogram and the statistical method were employed to test the normality of the data.

4.6.2 Graphical method

As suggested by Field (2009), for a sample of above 200 respondents it is important to conduct graphical test through histogram to ascertain the normality of the data. Following this suggestion, this study employed a graphical method to check the normality of the data, and the result shows that the study has attained the normality requirement because, the data is normally distributed as all the bars falls within the curved area as indicated in the (Appendix C)

4.6.3 Statistical method

Skewness and kurtosis are other ways of assessing the normality of data which is achieved through the statistical method. Literature support the assumption that, any value larger than 2 is accepted for skewness, while value ranging from 3 to 7 is accepted as normal for kurtosis (Curran, 1996). In this present study, the output result of the statistical analysis

shows that, all the values were close to zero except one variable that has a value, which is larger than 2. However, this does not pose a threat to the normality of the data, because in the graph, the variable indicated a normal curve. As for the kurtosis, all the variables fall within 3 to 10 as suggested by Curran (1996). Thus, the data distribution for all the variables are appropriately normal and suitable for further regression analysis as the value ranges from -2 to 1.1 value which was within the requirement as indicated in table 4.12 below.

Table 4.12

Skewness and Kurtosis Test

Variables	N statistics	Skewness	Kurtosis
Poverty	400	.058	-974
Employment	400	.592	-076
Agriculture	400	-288	.665
Health	400	.270	.340
Education	400	-2.388	5.434
NGO	400	-1.425	1.154
Valid N Listwise	400		

Source: Researcher

4.6.4 Linearity

The basic underpinning assumption of linearity is that, the relationship among variables or between variables, both independent, dependent and intervening variables should be linear (Pallant, 2007). To achieve this assumption, linear regression analysis was conducted for this study, where the residual scatter plot was used to determine the concentration of the scores. The residual scatter around 0 and most of the scores concentrated at 0 point. Therefore, the assumption of linearity was not violated in this study as most of the residual scores converged at the center along the zero point, attesting to the fulfilment of the linearity assumption (See Appendix C).

4.6.5 Multicollinearity

Tabachnich &Fidell (2007) suggested that, in multiple regression analysis procedure, no independent or explanatory variable should have a perfect linear relationship with one another. However, there are two ways of detecting multicollinearity among variable in a model. The First method is by checking the correlation matrix of the independent variables, and secondly, by checking the variance inflated factor (VIF), which should not exceed 10. However, a tolerance level of above .10 is an indication of problem (Hair et al.2010). In this present study, the independent variable is only one, and therefore, the problem of multicollinearity is a non- issue in this study.

4.6.6 Homoscedasticity

Homoscedasticity which is also referred to as homogeneity, is usually assessed through two methods. The first methods of assessing homoscedasticity according to Pallant (2007) is through Levene's test. When the Levene's test exceeds 0.5, homoscedasticity issue does not exist. An examination of the homoscedasticity in this study, shows that the assumption of homoscedasticity was not violated (See Appendix C).

4.7 Goodness of Measures - Factor Analysis

Before the conduct of factor analysis, certain condition needs to be met. The sample size of the data is required to be a minimum of 300 cases (Tabachnick& Fidel, 2007). Hair *et al.,* (2010) asserted that, the general rule of thumb for a factor analysis to be carried out is that, there should be a minimum of 5 respondents per variable under study. Therefore, with a sample data of 400, and six variables, this study has met with this condition. A

sample size of more than 350 requires a factor loading of 0.30 to assess the statistical significance (Hair *et al.,* 2010, Tabachnick&Fidell, 2007).

The principal component analysis (PCA) employed in this study extract factors based on Eigenvalue of greater than or equals to 1. According to Pallant (2007) and Hair et al.,(2010) factor analysis is considers to be appropriate when most of the item's correlation coefficients were at least 0.3 and above. Bartlett's test of the sphericity need to be significant at ($p<0.05$). Kaiser – Meyer-Olkin (KMO) and the overall measure of sampling adequacy (MSA) should be at least 0.6 and above for a good factor analysis. If the value is lower than 0.6, this indicates the need for collecting additional data or additional variable need to be introduced (Field, 2009). Bhatti (2015) classified KMO values as this, value between 0.5 and 0.7 as average, 0.7 and 0.8 as good, 0.8 and 0.9 as very good, and any value above 0.9 are considered excellent. Hair et al*.,* (2010) asserted that, the value of measure of sampling adequacy (MSA) must exceed 0.5 for the overall test as well as individual variables, item loading that is lower than 0.5 is removed, although a loading of 0.3 is considered as minimum it is not advisible to be including for further analysis (Tabachnick&Fiddell, 2007). In determining the number of components (factors) to be extracted, there is need for considering other vital output (KMO, total variance explained). Item loading and cross loading of 0.5 and above on one factor is considered in this study due to its statistical and practical significance (Hair *et al.,* 2010; Tabachinick:&Fidell, 2007). Hence, the above-mentioned decision rules were used as a basis for conducting principal component analysis in this study. The factor analysis for the dependent, independents, and moderating variables were as follows:

4.8 Dependent variable rural development – poverty, employment, agriculture productivity, health

4.8.1 Poverty

Prior to factor analysis, the variable poverty has 14 items as its measurement, after conducting the factor analysis, 4 items were deleted due to low loading of below 0.5. The result from the factor analysis for this variable has shown that, the factor loading ranges from 0.705 to .0.895. The result for Eigenvalue correlation matrix shows a value of 4.745 which is adequate for this study. The MKO result shows a value of 0.734, which is adequate as suggested by Tabachnick and Fidel (2007). The Cronbach's Alpha result shows a value of 0.845 which is acceptable as suggested by Tabachnick and Fidell (2007) that, for items to reliably measure a variable, the value must be above 0.6, and the Barllett's test of sphericity must also be significant at $p<0.000$ to support the factorability of the correlation matrix.

4.8.2 Employment

Table 4.13 indicated that the result of the factor analysis for the variable-employment. All the 15 items that were used to measure employment were adapted and the items were vetted by other researchers and were found suitable to measure the variable. However, the result for the factor loading ranges from 0.705 to .0. 895.The result for Eigenvalue correlation matrix shows a value of 3.643 which is adequate for the study. The MKO result shows a value of 0.638, which is adequate as suggested by Tabachnick and Fidell (2007) that value above .5 is adequate. The Cronbach's Alpha result shows a value of 0.773 which is acceptable as suggested by Tabachnick and Fidell (2007) that, for items to reliably measuring a variable, the reliability test must be above 0.6 and upward, and the result for

the Bartllett's test of sphericity also was significant at p<0.000 which strongly supported the factorability of correlation matrix.

4.8.3 Agricultural Productivity

Table 4.13 indicated the result of the factor analysis for the variable agricultural productivity. All the 11 items that were used to assess agricultural productivity were adopted wholly so there were no issues as the items were tested by other researchers and they were found to be reliable. However, the result for the factor loading ranges from 0.705. to 0.895. The result for eigenvalue correlation matrix shows a value of 3.582 which is adequate for the study. The MKO result shows a value of 0.756 which is adequate as suggested by Tabachnick and Fidel (2007) that, value above 0.5 is adequate as a sample. The Cronbach's Alpha result shows a value of 0.829 which is acceptable as suggested by Tabachnick and Fidel (2007) that, for items to reliably measuring a variable, the reliability test must be above 0.6 and upward. The Bartllett's test of sphericity was also significant at p<0.000 which strongly supported the factorability of correlation matrix.

4.8.4 Healthcare

Table 4.13 indicated the result of the factor analysis for the instrument measuring healthcare. All the 14 items used to assess healthcare were adapted. These items were tested by other researchers and they were found to be reliable to measure healthcare delivery. However, the result for the factor loading obtained from the analysis ranges from 0.705. to 0.895. The result for Eigenvalue correlation matrix shows a value of 4.134, which is adequate for the study. The MKO result shows a value of 0.686 which is adequate as suggested by Tabachnick and Fidell (2007) that, value above 0.6 is adequate as a

sample. The Cronbach's Alpha result shows a value of 0.820, which is acceptable as suggested by Tabachnick and Fidell (2007) that, for items to reliably measuring a variable, the reliability test must be above 0.6 and upward. The Bartllett's test of sphericity was also significant at p<0.000, which strongly supported the factorability of correlation matrix.

Table 4.13

Summary result for the factor analysis for rural development

		Loadings			
Code	**Items**	**1**	**2**	**3**	**4**
P1	Earn 300 naira per day	.725			
P2	Income sufficiency	.675			
P3	Three square meal	.723			
P4	School fees	.635			
P9	TV set	.502			
P10	Cell-phone	.583			
P11	Bike	.629			
P12	Motorbike	.777			
P13	Refrigerator	.719			
P14	Car	.567			
Em9	**Agriculture**		**.648**		
Em10	Mining		.532		
Em11	Construction		.774		
Em12	Transport		.588		
Em13	Manufacturing		.548		
Em14	Labourer		.629		
Em15	Technician		.601		
Agri2	Fertilizer			.501	
Agri5	Extension service coaching			.589	
Agri6	Subsistent farmer			.649	
Agri8	Energy			.578	
Agri9	Modern agric implement			.727	
A1gri0	Real estate			.754	
Agri11	An acre of land			.774	
Hlth4	Immunization				.669
Hlth5	Sanitary				.521
Hlh6	Portable water				.665
Hlth7	Hospital				.699
Hlth8	Referral services				.634
Hlth9	Drug				.602

Hlth12	Condition of the healthcare facilities				.610
Hlth13	Medical personnel				.630
Hlth14	Hospitals modern equipment				.604
Eigenvalue		4.745	3.643	3.582	4.134
Percentage		67%	64%	52%	65%
MKO		734	638	756	686
Barlett's Sphericity		2461.265	1736.846	1462.778	2278.203
Significance		.000	.000	.000	.000

Source: Researcher

Table 4.14

Result for the factor analysis for education infrastructure

Code	**Items**	**Loading**
ED1.	School building	.759
ED2.	School library	.794
ED3.	Quality teachers	.867
ED4.	Class facilitate	.886
ED5.	School workshop	.837
ED6.	School playing ground	.862
ED7.	School furniture	.804
ED8.	Electricity	.834
ED9.	Water point	.852
ED10.	Teaching aids	.866
Eigenvalue		**7.005**
Percentage		**80%**
MKO		**879**
Barlett's Sphericity		**4369.500**
Significance		**.000**

Table 4.15

Result of the factor analysis for NGOs

Code	Items	Loadings
NGOs1	Local NGOs	.732
NGOs2	Foreign NGOs	.736
NGOs3	Religious NGOs	.690
NGOs4	Development partners	.861
NGOs5	Provision of services	.820
NGOs6	Promoting self-reliance	.900
NGOs7	Empowerment	.788
NGOs8	Agricultural productivity	.822
NGOs9	Job generation	.843
NGOs10	Health status	.870
NGOs11	Clinic construction	.861
NGOs12	Activities impact	.847
NGOs13	Rural development	.798
NGOs14	Construction	.727
Eigenvalue		**9.161**
Percentage		**65%**
MKO		**920**
Barlett's Sphericity		**5693.153**
Significance		**0.000**

4.9 Measuring the reliability of the research instrument

There are ways in which reliability of an instrument can be tested, and the most common one is by Cronbach's alpha coefficient. Cronbach's alpha is used to test the consistency of an instrument to ascertain whether all the items of the instrument measure the same thing. As for this study, there are six constructs which emerged after the factor analysis test.

The reliability test for each of the variables in the instrument as indicated in table 4.16 shows that, the result ranges from 0.07 to 0.09, indicating the reliability of the construct which is above the minimum acceptable value of 0.6 as suggested by (Hair et al., 2010).

Table 4.16

Reliability of the Instrument

Variables	Construct	Indices	No of Items	No of Items Deleted	Cronbach's Alpha
Dependent	Rural development	Poverty	14	4	0.845
		Employment	15	8	0.773
		Agriculture	11	4	0.829
		Health	14	8	0.820
Independent	Education infrastructure	-	-	-	0.952
Moderator	NGOs	-	-	-	0.958

Source: Researcher

4.10 Validity Test

Apart from the reliability test that was ran to test the reliability of the construct, this study also conducted validity test for the construct to ensure that, the constructs measure what it intends to measure (Hair et al., 2010). Similarly, Sekaran (2013) defined validity as the dependability of construct to measure what it intends to measure. To this end, the validity of all the construct was examined through content and construct validity.

The validity of the instrument was verified by experts and scholars within the field of development studies. In order to ascertain the instrument used for this study is made simpler as possible for the respondents, the result of the pretest in chapter three can be referred to. The construct validity was established by the factor analysis test whereby the Kaiser-Meyer (KMO) Bartlett's test of sphericity was tested to be above 0.6 for all the constructs and Bartlett's test of Sphericity was significant for all the constructs. Thus, this study, has met the requirement for validity test and the construct was found to be suitable for further analysis. Furthermore, in order to establish the validity of the construct,

descriptive analysis was conducted for all the six constructs, and the result of the of the analysis was indicated in the table 4.17 below.

Table 4.17

Summary of Reliability Analysis of Major Variables

Variables	N	Minimum	Maximum	Mean	STD	Variance
Poverty	400	1.30	4.50	2.93	.922	.850
Employment	400	1.00	4.57	2.15	.678	.461
Agri/productivity	400	1.00	4.14	2.86	.782	.613
Healthcare	400	1.11	4.56	3.02	.720	.518
Education infrastructure	400	1.00	4.79	3.80	.933	.871
NGOs	400	1.00	5.00	4.07	.844	.706

4.11Correlation Analysis

Correlation analysis techniques are usually conducted to assess the relationships between construct in order to ensure that, the construct work together in measuring what they are meant to measure. Correlation is commonly used in describing the degree of linear relationship between variables (Pallant, 2011). There are a number of statistical tools which are used to determine the construct relationship among which is Spearman Rank Order Correlation, and Pearson Correlation-Coefficient.

Depending on the type of data one has, the two tools are widely used for correlation analysis. This study used the Pearson Correlation Analysis and the result has shown that, five of the variables correlate except employment which has 0.0 value implying absent of relationship, and two values indicated negative relationships, while the rest of the values shows positive signs, which implies that, most of the variable has a positive relationship.

In addition, the strength of the variables ranges from 0.064 to 0.615 as shown in the table 4.18 below.

Table 4.18

Summary of correlation analysis of the constructs

Constructs	1	2	3	4	5	6
Poverty	1					
Employment	.064	1				
Agriculture	.332**	-.187**	1			
Health	.023	.079	.216**	1		
NGOs	.163**	.030	.411**	.248**	1	
ED	.261**	-.037	.396**	.268**	.615**	1

** Correlation is significant at 0.01 level (2-tail)

4.12 Multiple regression analysis tests for the hypotheses H1 - 8

In order to test the hypotheses of the study in determining whether to accept or reject the hypothesis through regression analysis, certain condition must be met. Some of these conditions are assessing outliers, normality, linearity, homoscedasticity to ensure their suitability for regression analysis (2010) and Pallant (2001).

An analysis of the direct relationship using multiple regression analysis was conducted to determine the relationship between independent (education infrastructure independent) and rural development (poverty, employment, agriculture productivity, health). The outcome of the regression analysis provides answers to the research questions, objectives and the hypothesis of the study. To report the result of the regression analysis, R-square, Adjusted R-square, F-value, Sig. value, Beta value, and t-value, were reported to serve as basis for accepting or rejecting the hypotheses of the study.

4.12.1 Results of hypotheses H1a testing (between education infrastructure and poverty)

Multiple regression analysis was conducted to determine the relationship between education infrastructure and poverty. The results of the analysis indicates that R-square value =0 .001, Adjusted, F value=.531, Beta value= .-030,t-Value = -729, Sig value = 0.466,. In other words, the R-square value shows that the predictor accounted for 0.01 percent in predicting the dependent variables and P<0.466 indicates a significant prediction of the independent variables to the dependent variables. Based on the output of the regression analysis where the beta value=-0.030, t value = -0.729, and P<0.466, this indicates insignificance relationship, and the hypothesis that says there is significant relationship between education infrastructure poverty is rejected. Thus, this study concludes that, education infrastructure does not have significant impact on the relationship between education infrastructure and poverty.

4.12.2 Result of hypotheses H1b test between (education infrastructure and employment).

Multiple regression analysis was conducted to determine the relationship between education infrastructure and employment. The results indicate that, the R square value =0.117, Adjusted R-square = 0.115, F = 52.973, beta= 0.289, t value = 7.278, P< 0.000. In other words, the R-square value shows that, the predictor accounted for 11.7 percent in predicting the dependent variables, and P<0.000 indicates a significant prediction of the independent variables to the dependent. Based on the output of the regression analysis where beta value = 0.289, t-value 7.278 and P< 0.000, which indicates that, there is significance relationship between education infrastructure and employment, H1b that says there is significant relationship between education infrastructure and employment is

therefore accepted. Hence, this study concludes that, education infrastructure serves as a significant predictor on the relationship between education infrastructure and employment.

4.12.3 Result for hypotheses H1c test between (education infrastructure and agricultural productivity).

Multiple regression analysis was conducted to determine the relationship between education infrastructure and agricultural productivity. The results indicated that, the R-square value = 0.155, Adjusted R-square = 0.153, F = 72,995, beta= 0.438, t-value =8.544, P<.000. In other words, the R-square value shows that, the predictor accounted for 15.5 percent in predicting the dependent variables, and P<0.000 indicates a significant prediction of the independent variables to the dependent variables. Based on the output of the regression analysis where beta value= 0.438, t-value= 8.544 and P<0.000 which indicates a significance relationship, therefore, hypothesis H1c, that says there is significant relationship between education infrastructure and agricultural productivity is accepted. Hence, this study concludes that, education infrastructure serves as a significant predictor on the relationship between education infrastructure and agricultural productivity.

4.12.4 Result for hypotheses H1d test between (education infrastructure and healthcare).

Multiple regression analysis was conducted to determine the relationship between healthcare and education infrastructure. The results indicated that, the R square value =157, Adjusted R-square =155, F =74.053, beta=0.369, t =8.605, and P<0.000. In other words, the R-square value shows that, the predictor accounted for 15.7 % in predicting the

dependent variables which indicates a significant prediction in the independent variables to the dependent variables. Based on the output of the regression analysis where beta value = 0.369, t-value =8.605, and P<0.000 which a indicates significance relationship, therefore, hypothesis H1d, that says there is significance relationship between education infrastructure and healthcare is accepted. Hence, this study concludes that education infrastructure serves as a significant predictor in the relationship between education infrastructure and healthcare.

Table 4.19

Summary of regression analysis for direct relationship for rural development indices

Variable	R square	Adj. R square	F	Beta	T-Value	Sig.
Poverty H1a	.001	.001	.531	-030	-729	0.466
Employment H1b	.117	.115	52.973	.289	7.278	0.000
Agriculture productivity H1c	.155	.153	72.995	.438	8.544	0.000
Healthcare H1d	.157	.155	74.053	.369	8.605	0.000

P<.446, P<.000, P<.000., P P<.000, = Significance

4.13 Moderating effect of NGO on the relationship between education infrastructure and rural development indices (i. e. poverty, employment, agricultural productivity, healthcare)

Hierarchical regression was used to determine the effect of the moderator on the relationship between independent variable and the dependent variable (Baron & Kenny, 1986; Frazier et al., 2004). Furthermore, a moderator can be divided into (Homologizer, quasi-moderator and pure moderator). Each of these moderators differs from one another in terms of the strength of their relationship. A homologizer function by changing the strength of the relationship, it does not interact with the independent variable and does not significantly correlate with the independent and dependent variable. Quasi-moderator and

pure moderator have a relationship with both independent and dependent variable (Sharma, Durand & Gur-Arie, 1981).

Additionally, Bontis and Serenko (2007) argued that, a moderator can be developed by employing two classifications. The first taxonomy is based on the relationship between the moderator and the dependent variable (does a particular variable relates or not relate to the dependent variable), while the second taxonomy, assesses whether a particular variable interacts with the independent variable. Therefore, a hierarchical regression analysis was conducted to assess the effect of NGO on the relationship between poverty, employment, agricultural productivity, healthcare, and education infrastructure.

To determine the moderating effect of NGO on the relationship between rural development (poverty, employment, agricultural productivity, healthcare and education infrastructure), a three-model hierarchical regression, as suggested by Baron and Kenny (1986), was conducted to assess the variance of proportion of a given variable explained by the other variables. These variables are entered in the regression analysis in a definite order (Cramer, 2003). In model 1, the direct effect of the independent variables was entered. In model 2, the moderating variable was entered to assess whether the moderator (NGO) has a significant effect on the dependent variables (poverty, employment, healthcare, and agricultural productivity). In model 3, the interaction terms (which are the product of the independent variable and the moderator variable) were entered to find out any additional variance explained. However, for moderator effect to be noticed, the interactions terms must be able to yield at least small increase in R square (Chaplin, 1991). According to Baron and Kenny (1986) a moderating effect takes place if the test in step 3

is significant. Similarly, Tabachnick and Fidell (2007) assert that researchers should examine the t-value or p-value under the coefficient table when establishing a moderating effect. The outcome of this analysis answers the second research question, objective and hypothesis of the study.

4.13.1 Result of the moderating effects hypothesis H2a testing of NGO on the relationship between education infrastructure and poverty

The result of the interaction effect of NGO on the relationship between education infrastructure and poverty was based on the model's summary, particularly on coefficient with more emphasis on model 3.

Model 1: When the independent variable education infrastructure was first regressed the result shows that, Rsquare = 0.001 which explained 1 percent of the variance, Adjusted R square 0.001, F value 0.531, P< 0.466, beta - 0.030, t -729. Based on the result from model 1, this analysis has confirmed the result from direct relationship which shows a negative but insignificant relationship between education infrastructure and poverty.

Model 2: When the moderating variable was regressed the result indicates that, R square = 0.001, Adjusted R square -0.002, F value 0.348, P<0. 000, beta 0.022, t = 0.590. Based on this result from model 2 this analysis has indicated a negative significant relationship between NGOs and poverty.

Model 3: When the interacting variables were regressed the result indicates that Rsquare 0.070, Adjusted R square 0.063, P< 0. 000, F value 9.871, beta -0.183, t -5.215. Based on the result from model 3, the result indicates that, NGOs moderates the relationship between education infrastructure and poverty. Hence, hypothesis H2a was therefore

supported. Therefore, this study concludes that NGOs serves as a significant moderator in the relationship between education infrastructure and poverty.

4.13.2 Result of the moderating effects hypothesis H2b of NGO on the relationship between education infrastructure and employment

The result of the interaction effect of NGO on the relationship between education infrastructure and employment was based on the model summary, particularly on coefficient with more emphasis on model 3.

Model 1: When the independent variable education infrastructure was first regressed the result shows that, R square = 0.117 which explained 11.7 percent of the variance, Adjusted R square = 0.115, F value 52.973, P< 0.000, beta = 0.289, t = 7.278. Based on this result from model 1, the ranalysis indicates a significant relationship between education infrastructure and poverty.

Model 2: When the moderating variable was regressed the result indicates that, R square 078, Adjusted R square = 0.076, F value 33.837, P< 0.000, beta = 0.213, t = 5.817. Based on this result from model 2, the result indicates a significant relationship between NGOs and employment.

Model 3: When the interacting variables were regressed the result indicates that R square = 0.131, Adjusted R square = 0.124, P<.117, F value 19.830, beta= 0.56, t = 1.572. Based on t = 1.572, and P<0.117 results, NGO did not moderate the relationship between education infrastructure and employment, and hypothesis H2b was therefore not supported. Therefore, this study concludes that, NGOs did not serve as a significant moderator on the relationship between education infrastructure and employment.

4.13.3 Result of the moderating effects hypothesis H2c of NGO on the relationship between education infrastructure and agricultural productivity

The result of the interaction effect of NGO on the relationship between education infrastructure and agricultural productivity was based on the model summary particularly on coefficient with more emphasis on model 3.

Model 1: When the independent variable education infrastructure was first regressed, the result shows that, R square = 0.155 which explained 15.5 percent of the variance, Adjusted R square = 0.153, F value 72.995, P<0.000, beta =0.438, t = 8.544. Based on this result from model 1, the analysis indicates a significant relationship between NGOs and agricultural productivity.

Model 2: When the moderating variable was regressed, the result indicates that, R square = 0.193, Adjusted R square = 0.191, F value = 95.308, P<0. 000, beta = 0 .441, t = 9.763. Based on this result from model 2, the result indicates a significant relationship between NGOs and agricultural productivity.

Model 3: When the interacting variables were regressed, the result indicates that, R square = 0.248, Adjusted R square = 0.243, P<0. 000, F value 43.636, beta 0.175, t = 4.023. Based on t = 4.023 and P<0.000, it has shown that, NGO moderates the relationship between education infrastructure and agriculture, and therefore, hypothesis H2c is supported. Therefore, this study concludes that NGOs serves as a significant moderator on the relationship between education infrastructure and agricultural productivity.

4.13.4 Result of the moderating effects hypothesis H2d of NGO on the relationship between education infrastructure and healthcare

The result of the interaction effect of NGO on the relationship between education infrastructure and healthcare was based on the model summary particularly on coefficient with more emphasis on model 3.

Model 1: When the independent variable education infrastructure was first regressed result shows that, R square = .157 which explained 15.7 percent of the variance, Adjusted Rsquare.155, F value 74.053, P<0.000, beta = 0.369, t = 8.605. Based on this result from model 1, the result indicates a significant relationship between NGOs and healthcare.

Model 2: When the moderating variable was regressed the result indicates that, R-square = 0.169, Adjusted R square = 0.167, F value 80.754, P<0. 000, beta = 0.345, t = 9.896. Based on this result from model 1 the result indicates a significant relationship between NGOs and healthcare.

Model 3: When the interacting variables were regressed the result indicates that R square = 0.225, Adjusted R square = 0.219, P<0. 000, F value 38.226, beta = -0.126, t = 3.406. Based on t=-3.406 and P<0.000 which indicated that, NGO moderates the relationship between education infrastructure and healthcare, therefore, hypothesis H2d was supported. This study therefore, concludes that, NGOs serves as a significant moderator on the relationship between education infrastructure and healthcare.

Based on the result of this study, the relationship between NGOs and education infrastructure on the indices of rural development (poverty, employment, healthcare, and agricultural productivity), can be regarded as pure moderator.

4.13.5 Summary of result of hypotheses testing of moderating effect of NGO on the relationship between education infrastructure and poverty, employment, agriculture productivity, health (rural development)

Table 4.20

Summary of result of hypotheses testing of moderation

Variable	Model 1	Model 2	Model 3
Poverty H2a			
R square	0.001	0.001	0.070
Adjusted R square	-001	-002	-063
F	.531	.348	9.871
Beta	-030	022	-183
T	-729	.590	-5.215
Sig	.446	556	0.000
Employment H2b			
R square	117	078	131
Adjusted R square	115	076	124
F	52.973	33.837	19.830
Beta	.289	.213	.056
T	7.278	5.817	1.572
Sig	0.000	0.000	0.117
Agric. Productivity H2c			
R square	155	193	248
Adjusted R square	153	191	243
F	72.995	95.308	43.636
Beta	.438	.441	.175
T	8.544	9.763	4.023
Sig	0.000	0.000	0.000
Healthcare H2d			
R square	157	169	225
Adjusted R square	155	167	219
F	74.053	80.754	38.226
Beta	.369	.345	.126
T	8.605	8.986	3.406
Sig	0.000	0.000	0.001

4.14 Summary of hypothesis testing

Table 4.21

Summary of hypotheses testing

Hypothesis	Statement	Findings
H1a	There is significant relationship between education infrastructure and poverty	Not supported
H1b	There is significant relationship between education infrastructure and employment	Supported
H1c	There is significanc relationship between education infrastructure and agricultural productivity	Supported
H1d	There is significant relationship between education infrastructure and healthcare	Supported
H2a	NGOs moderates the relationship between education infrastructure and poverty	Supported
H2b	NGOs moderates the relationship between education infrastructure and employment	Not supported
H2c	NGOs moderates the relationship between education infrastructure and agricultural productivity	Supported
H2d	NGOs moderates the relationship between education infrastructure and healthcare	Supported

4.15 Summary

This chapter has presented a detailed description of data administration procedures, and a full analysis of the demographic variables and their result was also presented in this chapter. Similarly, the chapter has presented the result of the hypotheses testing where eight hypotheses were tested and the result showed that six out of the eight hypotheses were significant while two were not significant. Education infrastructure was found to have significant influence on employment, agricultural productivity, and healthcare. Similarly, NGOs moderate the relation between education infrastructure and poverty, agricultural productivity and healthcare. The next chapter discusses the recapitulation of the study, result, implication, limitation, future research and conclusion.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

5.1 Introduction

This chapter presented the result in the previous chapters in line with the research objectives, questions, hypotheses and the review of the literature. The chapter contains the highlights of the recapitulation of the study, result of a study in line with the research objectives and hypotheses, the implication of the study in relation to the theoretical, policy and methodological implication, limitations of the study, and finally, suggestions for future research directions and a general conclusion as well.

5.2 Recapitulation of the study

The present study analyzed the relationship between education infrastructure and rural development (poverty, employment, agricultural productivity and healthcare) in Katsina State Nigeria. The moderating effect of NGOs on the relationship between education infrastructure and rural development (poverty, employment, and agricultural productivity and healthcare,) were examined. Quantitative survey method was employed as the approach for the study, and data collection processes were mainly through primary sources. The instrument for the study was adapted and modified from previous studies though literature review. Self-administration of the questionnaire was used which allows the researcher to have a face to face contact with the respondents.

A sum of 434 sets of questionnaires were distributed to the rural people across six local government areas of Katsina State. Having distributed 434 questionnaires, 410 questionnaires were completed and returned, out of which 400 questionnaires were retained for further analysis. The data were subsequently coded and keyed into SPSS version 23, and the analysis was started by checking for missing values and outliers. No missing value was detected in the entire data set. This achievement is not unconnected with the researcher's effort right from the field, in ensuring that all items are duly answered by respondents, and at the same time, the researcher's ability to key in the questionnaires collected within the shortest possible time. To verify the validity of the instrument, Principal Component Analysis was conducted to factor and analyze the instrument.

Similarly, a reliability test was conducted for assessing the internal consistency of the measures through Cronbach's alpha which ranges from above 0.6 to 0.9 for all the constructs. The hypotheses of the direct relationship were tested using multiple linear regression analysis, whereas, the hypotheses about the indirect relationship (moderation) were tested using hierarchical regression analysis. The result of factor analysis for rural development indices which has poverty, employment, agricultural productivity and healthcare as the dependent variable, indicates that, the construct is measured as four dimensions, and their respective reliability coefficient stood above 0.6 which is the minimum benchmark.

In relation to hypothesis testing for direct relationship, multiple regression analysis was conducted and the result showed that, three out of the four hypotheses for the direct

relationship was supported, one was not supported, while the result of hierarchical multiple regressions showed that, NGO was not a moderator to employment as none of the interaction was significant, but the remaining three hypotheses showed significant moderating effect.

5.3 Discussion of result

The discussion of the result of this study is grouped into three sections, the first section discusses the first objective of the study which was to determine the level of rural development (poverty, employment ,agricultural productivity, healthcare) , the second section relate to object two, which discusses the direct relationship between education infrastructure and rural development (poverty, employment ,agricultural productivity, healthcare),while the third section which relate to objective three, discusses the moderating effect of NGOs on rural development (poverty, employment ,agricultural productivity, healthcare).The discussions was aligned to the research question, objectives, hypotheses , as well as the theoretical and conceptual framework of the study.

5.4 Level of rural development (poverty, employment, agricultural productivity, healthcare).

The first research objective of the study, which is in line with the research question was to assess the level of rural development (poverty, employment, agricultural productivity, healthcare) in Katsina State. The aim of the question was to assess whether the state is doing well in developing the rural areas of the State. Descriptive statistics was conducted to answer this objective using some selected items in the questionnaire for measuring the level of poverty, employment, agricultural productivity, healthcare. Frequency and

percentage were used in determining the level of each of the variables (poverty, employment, agricultural productivity and healthcare).

5.4.1 Poverty Level

Based on item 1 of the questionnaire which asked the respondent about their daily income, the responses shows a frequency of 300 representing 75 percent of the responses, who opined that, they earned less than 300 hundred naira per day (less than a dollar) which is an indication of prevalence poverty and low level of rural development as majority of the rural people were under the poverty line. On item 2 of the questionnaire, respondents were asked on the sufficiency of their income, the responses show a frequency of 312 representing 78.3 percent, who opined that, their income is not sufficient for them to take care of their family basic needs. On item 5 of the questionnaire, respondents were asked the type of cooking utensil they use, they opined that, they use dung and their responses shows a frequency of 316 representing 79 percent. On the ownership of GSM, the respondents were asked whether they have a cell-phone, majority of the respondents opined that, they do not have a cell-phone as indicated by a frequency of 324 representing 81 percent.

Based on the responses as indicate above, this study concludes that, the level of poverty in the areas under study was high which also implies that, the level of rural development was very low. This finding is consistent with NBS (2017; Kanayo; 2014) who places the Nigerian poverty rate at 75 percent. Similarly, Akpan (2012) opined that, the greater part of public efforts on rural development was subsumed under agricultural development, which was a sort of exploitation to the rural resources, and hinders the improvement of

their quality of life, and thereby stagnate the development of the rural areas. In summary, the prevalence of poverty in the rural areas has constituted a major obstacle in rural development thrive.

5.4.2. Employment level

Based on item 1 of the questionnaire which asked the respondent about their types of employment, the responses show a frequency of 196 representing 49 percent of the who opined that, they opined that they are full-time workers, either as public servant or self-employed. Although, the full-time employment rate was 49 percent, majority of them were on menial job, which is not sufficient to make them live a good life as a worker, and this also indicates that, a substantial number of the respondents were not full-time employee which is an indication of under-employment. On the un-employment rate from demographic analysis, the responses show a frequency of 32 representing 8 percent, which was stable, but the number of unemploy increases when its summer, because most of them work in farm which is the major sources of employment for the rural people. Thus, what is deduced from this result was that, though, the majority of the respondents were employed in one area or the other, the employment was seasonal which does not prevent people from being in poverty and this is an indicative of low level of rural development (Awogbenle,2010; Okafor, 2011).

Based on the responses as indicated above and Seer (1969), who asserts that if the level of unemployment is high in a country even if the per capital income is high its erroneous to call that development, therefore this study concludes that, the level of rural development is very low.

5.4.3. Agricultural productivity level

Based on item 1 of the questionnaire which asked the respondents whether they have livestock, the responses show a frequency of 332 representing 83 percent. Item 2, which asked the respondents as whether they have the financial ability to buy enough fertilizer to apply in their farms, the responses show a frequency of 324 representing 81 percent. Item 4, on which the respondents were asked whether they have enough capital to boost their farming occupation, the responses show a frequency of 280 representing 70 percent Item 7, in which the respondents were asked as whether they are commercial farmers or subsistence, the responses show a frequency of 324 representing 81 who opined that, they are not commercial farmers. Item 11, in which the respondents were asked as whether their land for farming is up to an acre, their responses show a frequency of 220 representing 55, who opined that their land for farming is not up to an acre. This analysis has indicated that, most of the farmers in the area under study were subsistent farmers due to lack of modern farming tools which compel them to resort to primitive farming techniques. This finding is consistent with other findings such as (Bello, 2012; Nchuchuwe,2012; Olajide, 2012). Based on the above, this study concludes that, the level of of rural development in Katsiana State is very low.

5.4.4 Healthcare level

Item 7, on which the respondents were asked as whether they have hospital in their area, the responses show a frequency of 324 representing 81 percent, who said they have hospital in their locality. Item 9, in which the respondents were asked as whether the hospitals in their area were stock with drug, the responses show a frequency of 224 representing 56 percent, who opined that there was no enough drug in their hospital. Item

12, in which their respondents were asked as whether their hospital have modern equipment, the responses show a frequency of 212 representing 53 percent, who opined that their hospital lack modern equipment. Item 13, in which the respondents were asked as whether the medical personnel are competent enough, the responses show a frequency of 224 representing 56 percent, who opined that, the personnel are not well trained. From this analysis it revealed that, healthcare services in the rural areas is poor and this is in line with the NBS (2015) survey that, revealed that most hospitals in the rural areas are in a deplorable condition. This could be the reason why life expectancy in the rural areas is low when compare with the urban centers (Amoran, 2013; Ukwaja, 2013).

In summary, analysis from the descriptive statistics and findings from other studies such as NBS (2017; Kanayo; 2014; Bello, 2012; Nchuchuwe,2012; Olajide, 2012; Amoran, 2013; Ukwaja, 2013) have indicated that, the level of rural development in most developing countries is low, and as indicated by this study, the rate of poverty in Katsina is high as majority of the people were living below the poverty line which means they earn less than a dollar per day. Similarly, as indicated by the descriptive finding, majority of the rural people were subsistent farmers which implies that, the farming activities was at a low level which shows that, the level of rural development in the areas under study was is at low level.

5.5. Relationship between education infrastructure and rural development (poverty, employment, agricultural productivity, healthcare).

The second objective of the study, which is in line with the research question and hypotheses was to determine whether there is significant relationship between education

infrastructure and rural development (poverty, employment, agricultural productivity, healthcare).

5.5.1 The relationship between education infrastructure and poverty

The first hypothesis of the study, states whether there is any significant relationship between education infrastructure and poverty. The aim of the question was to determine whether education infrastructure can be a good predictor of poverty reduction in the rural area. Multiple linear regressions were conducted to test this hypothesis. The result indicated that, education infrastructure variable was able to explain 0.01 percent of the model (R square=.001, Adjusted R square=-001, F value=0.531, beta= -0. 030, t value= -729 and the P< .466). Hence, the result did not support H1 which says that, there is a significant relationship between education infrastructure and poverty. Even though, the beta value and the t value have shown that education infrastructure was able to reduce poverty by 729, the P value at P< .466 indicates a non-significant result. Although, this study did not establish a significant relationship between education infrastructure and poverty, this finding is in consistent with a study by Ullah (2007), that reveal economic condition of the poor in the study areas has not improved much when judged against some selected indicators of rural development, such as employment and income. This implies that Ullah's (2007) study did not also finds significant relationship between education and poverty reduction. Furthermore, a recent 10-year study of 'participation' in World Bank projects, for example, highlights that, while fostering community participation has achieved success in service delivery, it has been less effective in reducing poverty or building capacity for collective action (World Bank, 2012). Similarly, Oladapo (2013) findings from a Time Series multivariate regression reveal that, investment in education

did not translate to poverty reduction. However, these findings were contrary to most studies and the possible reason for this inconsistency could be attributed to the quality of education that is being offered.

Other possible reason for the non-significant relationship in this study could be attributed to insufficient schools in the rural areas, as well as lack of good teaching and learning facilities in most rural schools. Another possible reason for this result could be due to the nature of the rural settings, where the job is scarce to find, even if one is educated. Similarly, another plausible eason for this result could be attributed to the nature of rural settings, where jobs and other economic activities are not predicated on one's level of education.

Additionally, the non-significant of this relationship could be attributed to the insufficient provision of education infrastructure by the government in the rural areas as a sole provider, because when NGOs was introduced as a moderator the result was significant at (P< 0.000). This implies that when government and NGOs team together in the provision of secondary school that can serve as a poverty alleviation mechanism and thereby leading to poverty reduction and rural development by extension.

5.5.2 Education infrastructure and Employment

The second hypothesis of the study states is there a significant relationship between education infrastructure and employment. Multiple linear regressions were conducted to test this hypothesis. The result indicated that, education infrastructure was able to explain 11.7 percent of the model (R square = 0.117, Adjusted R square = 0.115, F = 52.973, beta=289, t=7.278, P< 0.000). This finding supported hypothesis H2 as stated above.

The finding of this study on the relationship between education and employment was in line with the findings of previous studies such as (Sulistyowati, 2013; Seth, 2014; Wiggan (2007), who found a significant relationship between education infrastructure and employment, as it was found that, one year of schooling increases earning by 10 percent on the average globally. This result is further in line with the human capital theory assupmtions, that education is one of the most potent mechanism for individual, and societal development (Becker 1964). Education is important in impacting social change by improving individual social economic and social status as well as condition of living. Education in the same way, increases critical ability of rural people to analyze their needs, seek for their right, and take greater control role in making decision that affect their lives. In summary, concentration of education in urban areas rather than in the rural areas has greatly affected the development of the rural area thereby leading to rural-urban migration that in turn generate youth-unemployment. This study concludes that, in order to reduce the menace of unemployment and underemployment, there has to be concerted effort in developing the human potential through educating especially in the rural areas which in turn could translate to rural development.

5.5.3 Education infrastructure and agricultural productivity

The third hypothesis of the study stated that there a significant relationship between education infrastructure and agricultural productivity. Multiple linear regressions were conducted to test this hypothesis. The result indicated that, education infrastructure was able to explain 15.5 percent of the model (R square = 0.15.5, Adjusted R square=0.153, F = 72.995, beta=0.438, t=8.544, P< 0.000).

The finding support H3 that says there is significant relationship between education infrastructure and agricultural productivity. The finding is in consistent with the study of Alene and Manyong, (2007; Klasen, 2011; De Muro, & Burchi, 2007) that revealed improved accessibility to quality education for rural people directly and positively improve productivity, food security and livelihood of the rural dwellers.

Conclusively, as was revealed by a study conducted by the World Bank in 1992 which examined eighteen low income countries that measure the relationship between education and agricultural efficiency in relationship to crop production which found that, farmer's level of education is correlated to their level of agricultural productivity, as four years of schooling increases farm productivity by 8.7 percent over those with no education, and the increase was greater by 13 percent where supplementary farm input was available.

5.5.4 Education infrastructure and healthcare

The fourth hypothesis of the study stated that, there a significant relationship between education infrastructure and healthcare. Multiple linear regressions were conducted to test this hypothesis. The result indicated that, education infrastructure was able to explain 15.7 percent of the model (R square =157, Adjusted R square=155, F = 74.053, beta=0.369, t= 8.605, P<0 .000). This finding supports the hypothesized relationship between the two variables.

This finding was also in line with the previous findings such as (Silles,2009; Huang, 2015; Brunello, 2016; Cranor, 2016; Viner, 2017) who found a positive and significant relationship between education infrastructure and healthcare service, as education helped in preventing premature death of mothers and children. Secondary school educated

mothers tend to be more informed about certain diseases which allow them to take preventive measures. In addition, the finding of this study has proved that, education can serve as the most viable instrument of rural development, as education has help rural people to be healthcare concious as an individual and as a community. Again, this finding had proved the assumption of human capital theory that, education can initiate social change by transforming attitude of man which can bring a chance in social relation thereby causing a change in people's behavior as it relate to health.

5.6 The Moderating Effect of NGOs on the relationship between education infrastructure and rural development (poverty, employment, agricultural productivity and healthcare)

The third objective of the study which was in line with the research questions and hypotheses, was to determine whether NGOs moderate the relationship between education infrastructure and rural development (poverty, employment, agricultural productivity, healthcare). As was earlier explained, studies on NGOs as a development alternative is a recent phenomenon which dates back to 1980s, as a result of this, literature on the subject of NGOs is scanty, particularly as a moderator, as such most of the supporting argument were based on direct relationship from previous studies such as (Robinson, 1993; Brown and Tandon, 1995; Sanyal, 1991; Farrington and Lewis, 1993; Vivian, 1994; Wellard and Copestake, 1993; Davis, Hulme and Woodhorse, 1994; Hashemi, 1992).

5.6.1 Moderation test for the NGOs on the relationship between education infrastructure and poverty

The fifth hypothesis says do NGOs moderate the relationship between education infrastructure and rural poverty? The result of the moderation test for the NGOs on the relationship between education infrastructure and poverty indicates that, the variable was

able to explain 0.7 percent of the model. The hierarchical multiple regression results show that, NGO has the following values R square = 0.070, Adjusted R square 0.063, F value = 9.871, beta = -0. 183, t= - 5.215, P = 000). Based on the t and p-value, hypothesis five (H5) which stated that, NGOs moderates the relationship between education infrastructure and poverty is therefore, supported.

Although, the result of the direct relationship between education and poverty was non-significant, the introduction of NGOs has influenced the relationship to that of being significant. This result is in conformity with (Robinson, 1993; Vivian, 1994; Sarumathi, 2011; Brass, 2012, Banks, 2015) findings, which shows that NGOs provides material support to rural people in forms of credit as a poverty reduction strategy. This, therefore, indicate that, the role of NGOs in rural development is significant particularly in the area of poverty alleviation thrive as was displayed by SEWA in India, where over one million clients were in its low-cost credit programme. This finding also implies that, NGOs could serve as a development partners, as such there is the need to synergize the effort of government with that of the NGOs in providing education infrastructure (secondary school) in the rural areas as this will serve as a poverty reduction strategy and rural development by extension.

5.6.2 Moderation test for the NGOs on the relationship between education infrastructure and employment

The sixth hypothesis says, do NGOs moderate the relationship between education infrastructure and employment? The result of a moderation test of the NGOs on the relationship between education infrastructure and employment indicated that, the variable is able to explain 13.1 percent of the model, Adjusted R square 12.4, F value= 19.830,

beta =0.056, t = 1.572, P =0 .117). Based on the t and p-value, hypothesis six (H6) which stated that NGOs moderates the relationship between education infrastructure and employment is therefore not supported.

This finding is in consistent with a study by Ullah (2007) which revealed that, the economic condition of the poor in the study areas has not improved much when judged against some selected indicators of rural development, such as employment and income. This implies that, Ullah's (2007) study finds no significant relationship between education and employment. In another study conducted by Tanimu (2017), it was found that, the operational impact of NGOs in social capital and community empowerment is less than claimed. The study also found that, instead of NGOs to be service facilitators, they rather become services providers to the vulnerable poor consumers. Furthermore, NGOs were found to be monolithic in their approach to empowerment that tends to exclude ordinary people.

There are several important reasons that can cause the insignificant result either due to contextual reason or demographical reason. One possible explanation for the insignificant result of this hypothesis could be, because NGOs in most Sub Saharan African countries including Nigeria lacks involvement in the rural areas especially in capacity building either in direct or indirect employment. Another plausible reason for these findings was that, the operation and activities of NGOs in Nigeria is very low particularly in the rural areas. Similarly, the demographic result of this study indicates that, about 50 percent of those employed were on temporary basis and mostly in the agricultural sector which seasonal and not stable. This study concludes that, in order to reduce the menace of

unemployment and underemployment there has to be concerted effort between the government and the NGOs in human development by educating the rural people which in turn will translate to rural development.

5.6.3 Moderation test for the NGOs on the relationship between education infrastructure and agricultural productivity

The seventh hypothesis says do NGOs moderate the relationship between education infrastructure and rural agricultural productivity. The result of the moderation test of the NGOs on the relationship between education infrastructure and agricultural productivity indicated that, the variable was able to explain 24.8 percent of the model, Adjusted R square 0. 24.3, F value= 43.636, beta =0 .175, t =4.023, P =0 .000). Based on the t and p-value, hypothesis seven (H7) which says that, NGOs moderates the relationship between education infrastructure and agricultural productivity was therefore supported.

This result tallied with (Bright, 2013; Garnevska,2011; Mandirahwe,2016) findings who found, the existent of significant relationship between NGOs and agricultural productivity. Bright (2013) finding revealed that, there is significant relationship between NGOs and agricultural productivity in rural district of Ghana as attested to by 67 percent of the respondent. The study also found that, NGOs were educating farmers on how to use modern technology to raise their productivity level, and also, fertilizer, pesticides and other weedicides were provided to farmers by the NGOs. They also provide them, with improved seed to cross breeds with the local breeds, they also provide improved and more resistant seedlings to the farmers, as well as contributing to the capacity building of the community leaders by organizing periodic workshops to train them.

5.6.4 Moderation test for the NGOs on the relationship between education infrastructure and healthcare

The eight hypothesis says do NGOs moderate the relationship between education infrastructure and rural healthcare? The result of a moderation test of the NGOs on the relationship between education infrastructure and healthcare indicated that, the variable was able to explain 22.5 percent of the model Adjusted R square 22.9, F value= 38.226, beta =0.126, t = 3.406, P = 0.001). Based on the t and p-value, hypothesis eight (H8) which says that, NGOs moderates the relationship between education infrastructure and agricultural healthcare was therefore supported.

The finding was in line with (Bright,2013; Ndjinga 2011) that NGOs play a significant role in the helping patient with a subsidized drug, free counseling on HIV related issues, as well as providing immunization services and net material to pregnant women.

In summary, based on the result from this study, out of the eight hypotheses that were tested, six were found to be significant, and two were not significant which implies that, the overall research framework and the theoretical framework of this study work together in establishing the relationship between the variables independent, dependent and the moderator. This synergy has proved that, education infrastructure and NGOs could be a good predictor of rural development (poverty, employment, agricultural productivity healthcare). Therefore, this study concludes that the research framework of this study can serve as mechanism for rural development as the result of hypotheses has proved that, education infrastructure (IV) and NGOs (MV) when combined has a significant influence on rural development (DV).

5.7 Implications of the study

Findings from this study have made available a number of useful implications to practitioners, academicians and the government. Essentially, these implications will also serve as a recommendation to the government, development donors, and it could also serve as a contribution to the body of knowledge, to the academia, and the professional. Several studies conducted on rural development mostly focused on agricultural development, construction of roads, provision of electricity and microfinance such studies include the work of ;Ikpi, (1989);Spencer, 2002; Lipton, 2005,Omoke (2007), , Akpan (2013), Shaheed (2010)., Yahaya, (2010), Olagunju (2014), Kefle (2012), Adenuga, (2012).

However, it is evidently clear that, the previous studies highlighted above were conducted out a single variable, whereas this study, integrated six variables as having direct relationships with rural development as proved by this study. It is also evidently argued by this study that, the most practical mechanism for rural development is the education infrastructure model, as propounded by this study. To achieve a sustainable rural development, an effective and viable model must be adopted, and it is proven by this study that, education infrastructure has a direct effect on rural development. It is therefore, suggested to the government and development donors to utilize this model and adopt it as a strategy for rural development. The findings of this study would therefore, serve as a framework for future reference, to academia, students and other stakeholders, it would equally help in making relevant recommendations.

5.7.1 Theoretical implication

Theoretically, this study has made several contributions to rural development literature in three perspectives. Firstly, by establishing directional relations between the independent and dependent variables, because as to the knowledge of the researcher, there not has been a single study in the history of development studies that established a positive directional relationship between rural development indices (poverty reduction, employment, healthcare, and agricultural productivity) and education infrastructure.

Additionally, this present research symbolized an additional and unique contribution to the existing literature on rural development by integrating several variables (poverty, employment, healthcare, and agricultural productivity) in a single study, which is unprecedented in the history of rural development studies, as most previous studies were mainly carried on two variables relationship.

Secondly, the introduction of NGO as a moderating variable on the relationship between education infrastructure and rural development, has for the first time in the history of development studies literature, established role of NGO in moderating the relationship between education infrastructure and rural development (poverty reduction, employment, healthcare, and agricultural productivity).

Furthermore, an extensive review of the literature has failed to provide a single study which uses NGOs as a moderator in the study of rural development. Notable exceptions are studies by Vivian (1994) from Zimbabwe, and Bright (2013) from Ghana. However, these studies differ from this present one, because the focus of their studies was on the role of NGOs in rural development on a direct relationship approach. Similarly, other few

existing studies that were conducted on the role of NGOs in rural development were mostly conducted in some Asia countries, like that of Ravallion (2011) and Santos (2013). However, a study on the role of NGOs on rural development in Nigeria was very scanty, more especially those that use NGOs as a moderator variable is a non-existence.

The filling of this contextual gap by this study, therefore, constitutes a tremendous contribution to literature in the study of rural development, as most existing studies were conducted in the other continent of the world. However, in a multi-ethnic, multi-linguistic, multi-religious, and the most populated country in the African continent, the literature on NGOs as a moderator on rural development in Nigeria is bound to be a great contribution to the body of knowledge, and to serve as a springboard for the emergent of other studies. This current study is undoubtedly a good contribution to literature on rural development, since it has revealed that, a significant relationship exists between NGOs and rural development through education infrastructure. This contribution serves as a great discovery which has, hitherto yet to be explored in the process of Nigeria rural development efforts.

Thirdly, by revalidating the significant relationship of education infrastructure on rural development (poverty reduction, employment, healthcare, agricultural productivity), the present study has revealed that, education infrastructure can significantly induce rural development. Education infrastructure has the potential of affecting rural development, and national development in general as indicated by the findings of this research work. Additionally, this research work has therefore, validate the human capital theory of Becker

(1964), which asserts that education is the most viable mechanism for human development.

5.7.2 Policy implication

This present research work had established a relationship between education infrastructure and rural development in Katsina State and Nigeria in general. Thus, besides theory and literature development, this study is significant in a practical sense as the research work has provided an important impetus to public sector organizations, international development organizations, as well as international and local donor agencies by providing an insight into the mechanisms for rural development.

In addition, findings from this research work will, undoubtedly provide a directions and guidelines for rural development and development of human capital policies, both at Federal, State and Local level. Governments, Development Agencies and Donor Agencies can benefit from this study by serving as a policy framework for rural development programmes. Specifically, this study provides an important mechanism for synergizing the effort of government and NGOs in bringing about rural development in Nigeria. Government stands to benefit immensely from this study in practical terms by making use of it in policy and programme initiation and implementation, as it relates to rural development at all the tiers of Governments.

5.7.3 Methodological Implications

Previous rural development studies have employed the use of analytical analysis such as content analysis as their methodological approach. Methodologically, the choice of

methodology should be based on the type and nature of the problem, the choice of approach or methodology is a matter of aptness (Sekaran, 2013).

Most studies on rural development were carried on a qualitative approach. Typical among these studies were studies by Yahaya (2010), Ale (2011), Ogunowo (2012), Adesoji (2013), and Idara (2014). This present study was however, conducted using a quantitative approach, which is more of scientific in nature as the researcher has little or no tendency to influence the result of the research. In addition, some of these qualitative studies were mostly conducted in Asian and Western countries, while this present study was conducted in African and specifically in Nigeria thereby filling the existing contextual gap in the literature of rural development.

5.8 Limitation of the study and Direction for Future study

Despite the insightful findings of this study, the study cannot be free from some limitations such as, scanty study on rural development using NGOs as either moderator or mediator, and other limitation which includes common-method bias, use of a cross-sectional survey.

Firstly, the issue of common- method bias was one of the limitations that this study has dealt with, to overcome the issue of common method bias this study, had employed some measures during data collection stage to mitigate the expected problem. As suggested by Podsakoff et al. (2012), for a study to overcome the problem of common method bias the collection of data for analysis should be carry out at different times.

The second measure was separating each variable in the questionnaire, which made it easy for respondent to answer the question easily, and thirdly, respondents were given the

questionnaire to fill at three different times. This method has indeed ensured that, common method bias was minimized to the barest minimum level.

Thirdly, due to the nature of PhD programme where a student is expected to finish within a stipulated time frame, conducting a longitudinal study is not feasible. Hence, this study has resorted to a cross-sectional survey research in which data were collected at one point in time within a period of three months. This served as one of the limitations of the study as the situation of the rural area is not static but dynamic and might change over a period.

Fourthly, this present research work, focused on the rural people of Katsina state, which indicates a limited scope of the study area. Although, this present research work did not aim at comparing rural development effort at different regions, yet differences may be found. Haven conducted this present research in Katsina State, it is suggested that future study should consider another state within the geopolitical zone.

Fifthly, the model presented in this study, could not examine all the variables that might capture rural development. This study only considered four variables poverty, employment, agricultural productivity, and healthcare to represent rural development. The result of the poverty model, has however, indicated a low variance of 0.1 percent through the moderating variable of NGOs. This has statistically demonstrated that the poverty model was not strong.

Moreover, the scanty nature of literature on rural development which uses either NGO or other alternative development providers as a moderator, has posed a serious problem for this study in supporting the findings, this is because, even the few studies on rural

development which exist within the contextual framework of Africa were conducted on a direct relationship (Vivian, 1994).

However, despite the difficulty experienced by this study in getting literature on NGO as alternative development providers, this study has leveraged on the findings of the previous study, which were mostly conducted on direction relationship. However, the other three rural development indices of employment, agricultural productivity and healthcare, have proven to be statistically strong with Rsquare value of 117,155,157 for employment, agricultural productivity and healthcare respectively. Again, the model's percentage ranges from 28.0 percent, 39. percent, and 39.6 for employment, agricultural productivity and healthcare.

On the whole, the study has theoretically demonstrated the predictive validity of its model. However, future research may come in to investigate other variables that may improve the variance explained by the present model. In addition, future studies may consider another perspective apart from education infrastructure, for example road, electricity and water infrastructure. Additionally, future study might consider NGOs, civil society and coordination as either moderating or mediating variable between education infrastructure and rural development.

5.9. The Contribution of the Study to the Body of Knowledge

This study makes several important contributions to rural development literature, especially on education infrastructure, and NGO. Overall, the study contributes to rural development literature in several ways. The first contribution is related to the sample of the study. Most of the existing knowledge-based rural development literature is largely

dependent on the sample of studies from the Asian and Western countries, focusing on poverty alleviation strategies.

However, studies on rural development within the context of developing economies, particularly in Nigeria are scanty. To expand the current knowledge base, there is a need for more empirical research using data obtained in a different context, besides Western and Asian countries. Accordingly, this study has helped to fill this existing gap in the literature of rural development by examining the effect of education infrastructure on rural development within the context of Nigeria. Thus, the present research work has immensely contributed to the body of knowledge by covering the continental gap that exists in the literature.

Similarly, another important gap filled by this study, was by examining rural development in multidimensional approach, in response to the call for researchers to go beyond examining rural development as a one-dimensional approach. For instance, there is a dearth of empirical work that links each of the element of the rural development in the construct with education infrastructure as a single influencer to the entire elements that constitutes rural development. Hence, this study advances the frontier of knowledge by examining rural development in multidimensional approach. This study has therefore, also extended the frontiers of knowledge by integrating several variables in a single study, and this by extension has added a new insight to the construct of rural development.

Again, the findings of this study has also contributed to rural development framework by includind NGO as a moderating variable. To date, there is no study on rural development that used NGO, either as moderating or mediating variables. To this end, this study has

made a breakthrough by adding NGO as a moderator to rural development literature which has not been examine before by extant studies.

Additionally, the present study is unique among studies on rural development as it has contributed to the body of knowledge through the methodological approach that was adopted. Majority of the studies on rural development uses secondary data, while this present study takes a unique approach by examining rural development using the primary survey data obtained through the administration of questionnaires to the respondents. Additionally, testing the instrument of rural development in a developing economy and within the context of Katsina State Nigeria is a unique contribution to the body of knowledge.

5.10 Conclusion

Conclusively, from a theoretical perspective, two important gaps exist in rural development literature concerning the relationship between education infrastructure and poverty, employment, agricultural productivity, healthcare (rural development). This was because previous studies on rural development such as Shaheed (2010), Yahaya, (2010), Olagunju (2014), have not addressed the following in their study: Firstly, the effect of education infrastructure on poverty, employment, agricultural productivity, healthcare (rural development), and secondly, the moderating influence of NGOs on the relationship between poverty, employment, agricultural productivity, healthcare (rural development) and education infrastructure. The present study has contributed to the body of knowledge by providing empirical evidence about the moderating power of NGOs on the relationship between education infrastructure and rural development.

Importantly, findings of this research have proven theoretically and empirically the association between education infrastructure and rural development. In reference to this, this study is practically of relevant to all efforts geared toward rural development. The finding of this present research work has shown that embracing education infrastructure as a model of rural development can help bring about the desired development in rural areas of Katsina state and Nigeria in general. Also, education has been identified by this study as the basic building block of every society. Education is the sole best investment a country can make toward establishing a prosperous, equitable and healthy society. Convincibly, this study is in agreement with the findings of previous studies (Vivian 1994, & Bright, 2013), and this had gone to validate the findings of this study.

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APPENDIX

, *APPENDIX:A*

Dear Respondents

I am a PhD Public management student at the above-named university, currently undertaking a research titled: *The Effect of Education Infrastructure on Rural Development: A Study of Katsina State, Nigeria"*.

This questionnaire is intended to collect data on the above topic for A PhD Certificate. Matric-900047/2014/15

We need your kind cooperation in filling out the questionnaire by ticking and commenting where necessary.

Finally we assure you of utmost confidentiality with regards to the information you will give us as it only be used for research purposes

Yours Sincerely,

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General Guidelines for the Survey

1. In most of the questions you are required to tick [√] on the space provided. In the last section, which is the demographic information, you are also to require to choose your response by ticking [√] the appropriate answer.
2. There are no rights or wrong answers. Hence, we would appreciate your honest and complete response to help us understand your views.
3. The questionnaire is divided into 4 sections. You are kindly requested to answer the questions in all the sections please.
4. We would like to re-assure you that the information you give will be treated confidentially.

SAMPLE QUESTIONNAIRE

NOTE: Please note that the questions herein are relate poverty

Section A: Rural Development

The following describe statements about strategic leadership attitudes in your organization. Please indicate the extent to which you agree or disagree with the statements based on the scales provided.

Section A: Rural Development

Section A: Please indicate your opinion as regard the following statement based on scale below

Poverty	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
P1. I earn less than 300 naira per day	1	2	3	4	5
P2. My income is not sufficient to cater for need	1	2	3	4	5
P3. I can't afford three square meals daily	1	2	3	4	5
P4. I can't afford my children school fees	1	2	3	4	5
P5.I use Dung/Wood to cook	1	2	3	4	5
P6.I use coal to cook	1	2	3	4	5
P7.I use cooker to cook	1	2	3	4	5
P8.I don't own a radio	1	2	3	4	5
P9.I don't own a TV	1	2	3	4	5
P10.I don't own a cell-phone	1	2	3	4	5
P11.I don't own a bike	1	2	3	4	5
P12.I don't own a motorbike	1	2	3	4	5
P13.I don't own a refrigerator	1	2	3	4	5
P14.I don't own a car	1	2	3	4	5

Employment: Please indicate your opinion as regard the following statement based on scale below

Employment	Strongly disagree	Disagree	Undecided	Agree	Strongly agree

EMI.I am a full-time worker	1	2	3	4	5
EM2.I am a part-Time worker	1	2	3	4	5
EM3.I am a managerial worker	1	2	3	4	5
EM4.I am a professional worker	1	2	3	4	5
EM5.I am a construction worker	1	2	3	4	5
EM6.I am a clerical worker	1	2	3	4	5
EM7.I am a craftsman	1	2	3	4	5
EM8.I am a driver	1	2	3	4	5
EM9.I am self- employ in agriculture	1	2	3	4	5
EM10.I am self- employ in mining	1	2	3	4	5
EM11.I am self- employ in construction	1	2	3	4	5
EM12.I am self- employ in transport	1	2	3	4	5
EM13.I am self- employ in manufacturing	1	2	3	4	5
EM14.I am self-employ as a labourer	1	2	3	4	5
EM15.I am self-employ as a Technician	1	2	3	4	5

Agricultural productivity: Please indicate your opinion as regard the following statement based on scale below

Agricultural productivity	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
A1.I have livestock	1	2	3	4	5
A2.I have enough fertilizer to apply in my farm	1	2	3	4	5
A3.I have pesticide for my crop	1	2	3	4	5
A4.I have capital to boost my farm	1	2	3	4	5
A5.I used to attend extension service coaching	1	2	3	4	5
A6.I am a subsistent farmer	1	2	3	4	5
A7. I am a commercial farmer	1	2	3	4	5
A8 I have energy to use in my farm	1	2	3	4	5
A9. I have modern agric implement that I use in my farm	1	2	3	4	5
A10. I have a real estate in my farm	1	2	3	4	5
A11. I have less than an acre of land	1	2	3	4	5

Healthcare: Please indicate your opinion as regard the following statement based on scale below

Healthcare	Strongly disagree	Disagree	Undecided	Agree	Strongly agree

H1.You have terminal disease	1	2	3	4	5
H2. Your child is malnourish	1	2	3	4	5
H3. People in house die early	1	2	3	4	5
H4. your Child received all require number of immunization	1	2	3	4	5
H5. You have access to sanitary	1	2	3	4	5
H6. You have access to portable water	1	2	3	4	5
H7. You have to hospital	1	2	3	4	5
H8. You have access to referral services	1	2	3	4	5
H9. You have Access to drug	1	2	3	4	5
H10. The distance from home to hospital is far	1	2	3	4	5
H11. Ambulance is always available for conveying patient to hospital	1	2	3	4	5
H12. The condition of the healthcare facilities is good	1	2	3	4	5
H13. The medical personnel are competent	1	2	3	4	5
H14. The hospitals has modern equipment	1	2	3	4	5

Section B Educational infrastructure: Please indicate your opinion as regard the following statement based on scale below

Education	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
E1. School buildings is used to facilitate effective dissemination of knowledge	1	2	3	4	5
E2. School library is used to facilitate effective learning and research	1	2	3	4	5
E3. Quality teachers improved the standard of education	1	2	3	4	5
E4. Classes facilitate dissemination of effective knowledge	1	2	3	4	5
E5 School workshop aids students in learn craft work	1	2	3	4	5
E6. School playing ground facilitate physical education	1	2	3	4	5
E7. School furniture facilitate dissemination of effective knowledge	1	2	3	4	5
E8. Electricity facilitate good functioning of a school	1	2	3	4	5
E9. Water point facilitate good	1	2	3	4	5

functioning of a school					
E10.Teaching aids facilitate dissemination of effective knowledge	1	2	3	4	5

Section C NGOs: Please indicate your opinion as regard the following statement based on scale below

NGOs	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
N1. There exist local NGO exist in my area	1	2	3	4	5
N2. There exist foreign NGOs in my area	1	2	3	4	5
N3. There exist Religious NGOs in my area	1	2	3	4	5
N4. NGO is perceived in my as development partners	1	2	3	4	5
N5.	1	2	3	4	5
N6. NGO helps in the provision of services in my area	1	2	3	4	5
N6. NGO helps in promoting self-reliance in my area	1	2	3	4	5
N7. NGO helps in empowerment in my area	1	2	3	4	5
N8. NGO helps in improving agricultural productivity via training in my area	1	2	3	4	5
N9. NGOs help in job	1	2	3	4	5

generation through skills acquisition in my area					
N10. NGOs help in improving health status through their services in my area	1	2	3	4	5
N11. NGOs help in clinic construction in my area	1	2	3	4	5
N12. NGOs activities has impacted positively on the rural people	1	2	3	4	5
N13. NGOs contribute in rural development effort	1	2	3	4	5
N14. NGOs help in school construction in my area	1	2	3	4	5

Thank You

Section D: Background information, kindly tick (√) as appropriate.

DMO1: Gender:

Male [ ]

Female [ ]

DMO2: Age:

18 – 25 [ ]

26 – 33 [ ]

34 - 41 [ ]

42 – 49 [ ]

50 and above [ ]

DMO3: Marital Status

Single [ ]

Married [ ]

Divorce [ ]

Widow [ ]

Separated [ ]

DMO4: Educational qualification:

Islamic School [ ]

No School [ ]

Primary Cert [ ]

Secondary [ ]

NCE & Equivalent [ ]

Degree [ ]

Postgraduate Cert [ ]

DMO5:Number of family

1-2 [ ]

3-5 [ ]

6-10 [ ]

11-15 [ ]

16 and above [ ]

DMO6:Religion

Islam [ ]

Christianity [ ]

Others [ ]

DMO7:Ethnicity

Hausa [ ]

Fulani [ ]

Others [ ]

DMO8:Occupation

Farmer [ ]

Civil Servant [ ]

Business man [ ]

Private company staff [ ]

Self-employed [ ]

Unemployed [ ]

APPENDIX:B

Reliability for all the variables

Poverty

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.845	.846	7

Employment

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.845	.846	7

Agricultural productivity

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.829	.828	6

Healthcare

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.820	.822	9

Education infrastructure

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.952	.952	10

NGOs

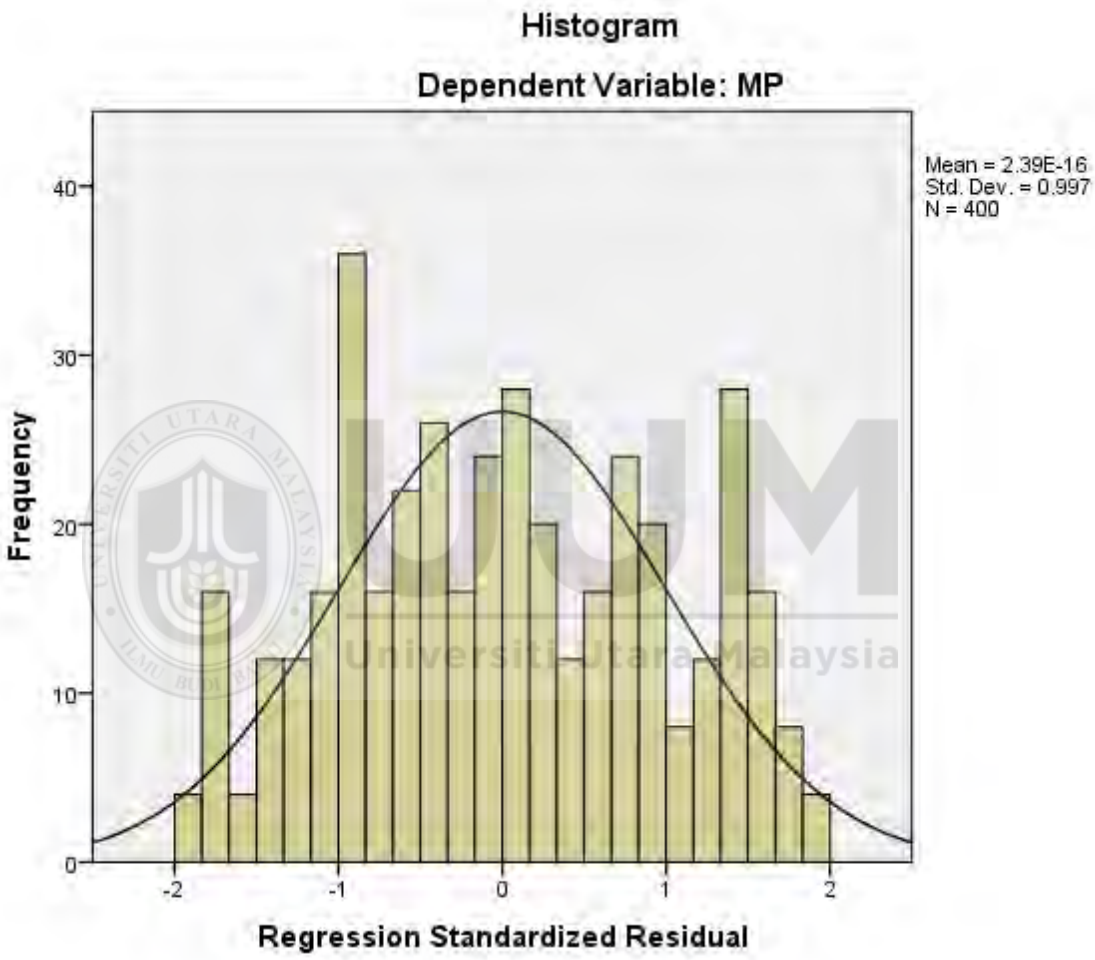
Reliability Statistics

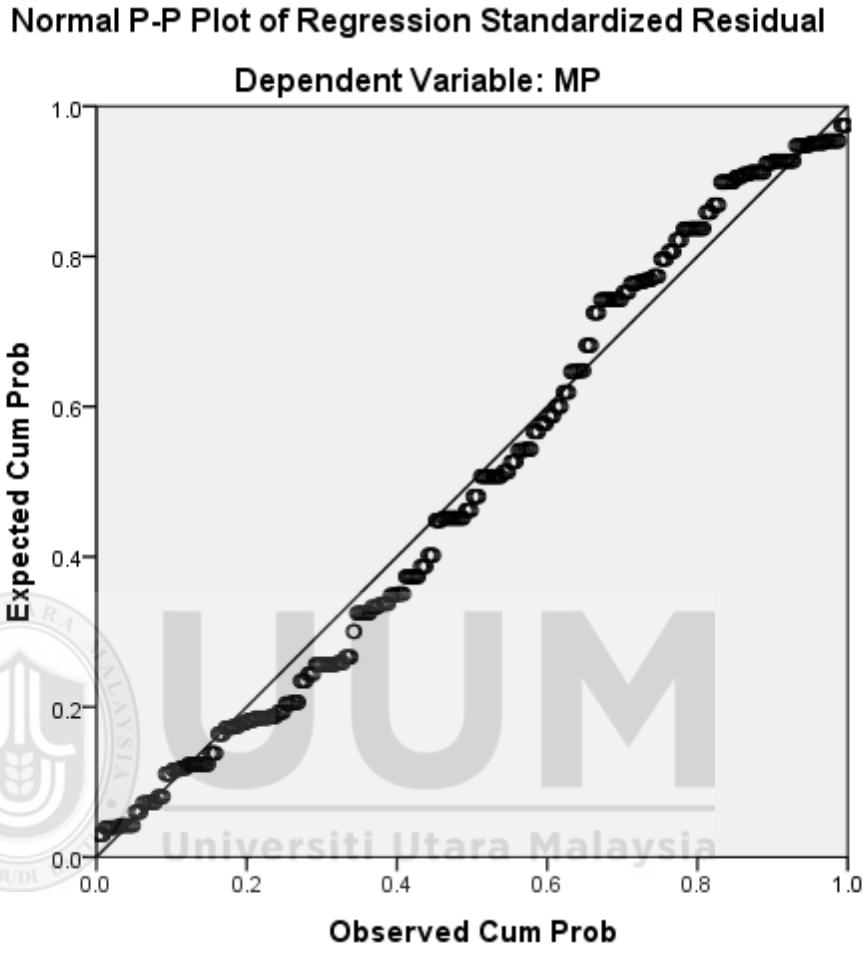
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.952	.952	10

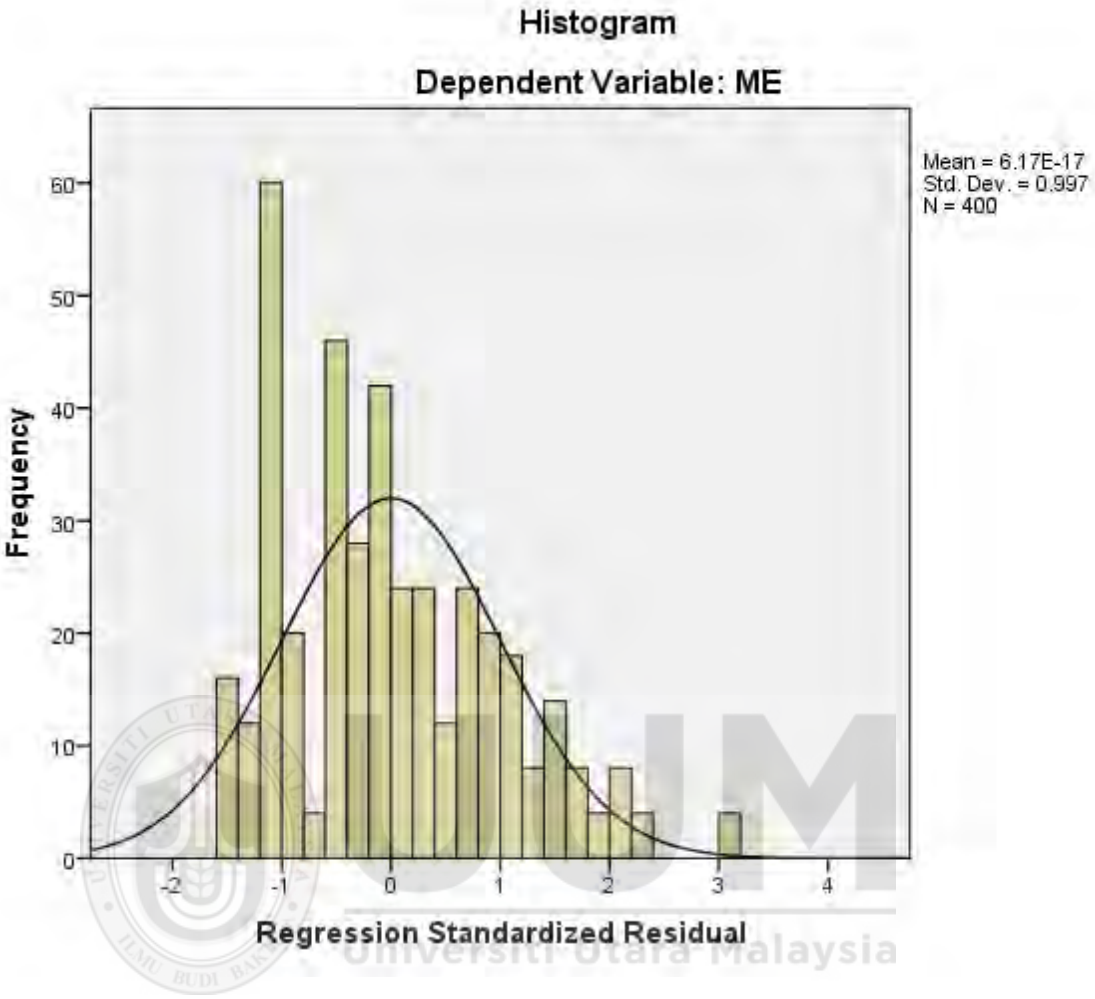
APPENDIX:C

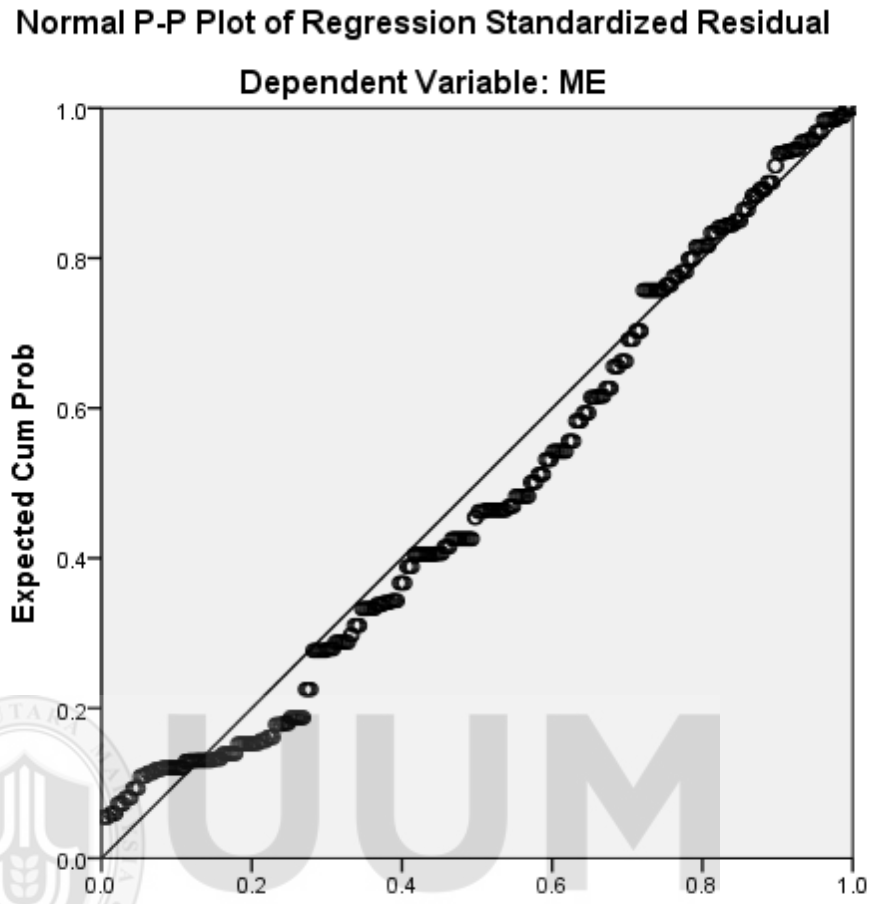
Normality for the dependent variable rural development

Normality for poverty (MP)

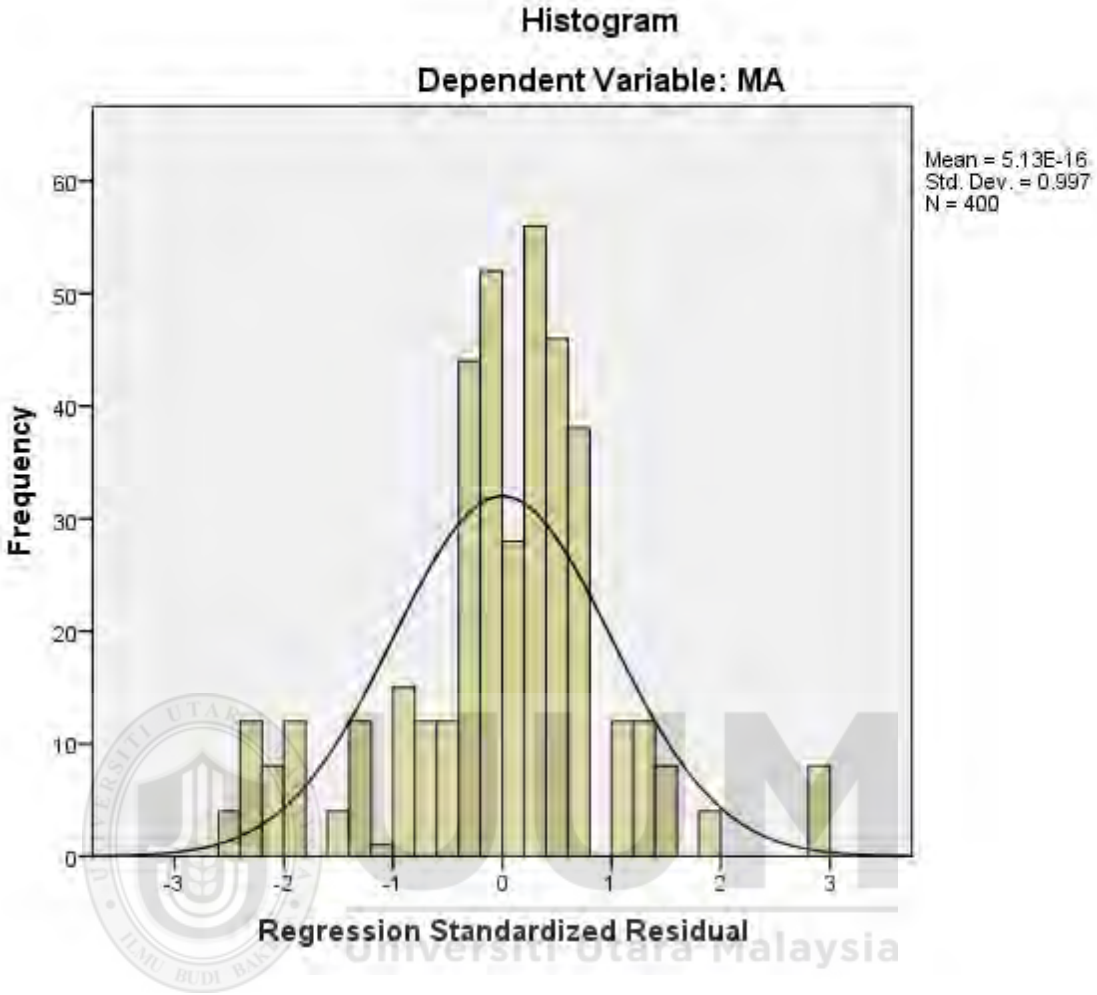


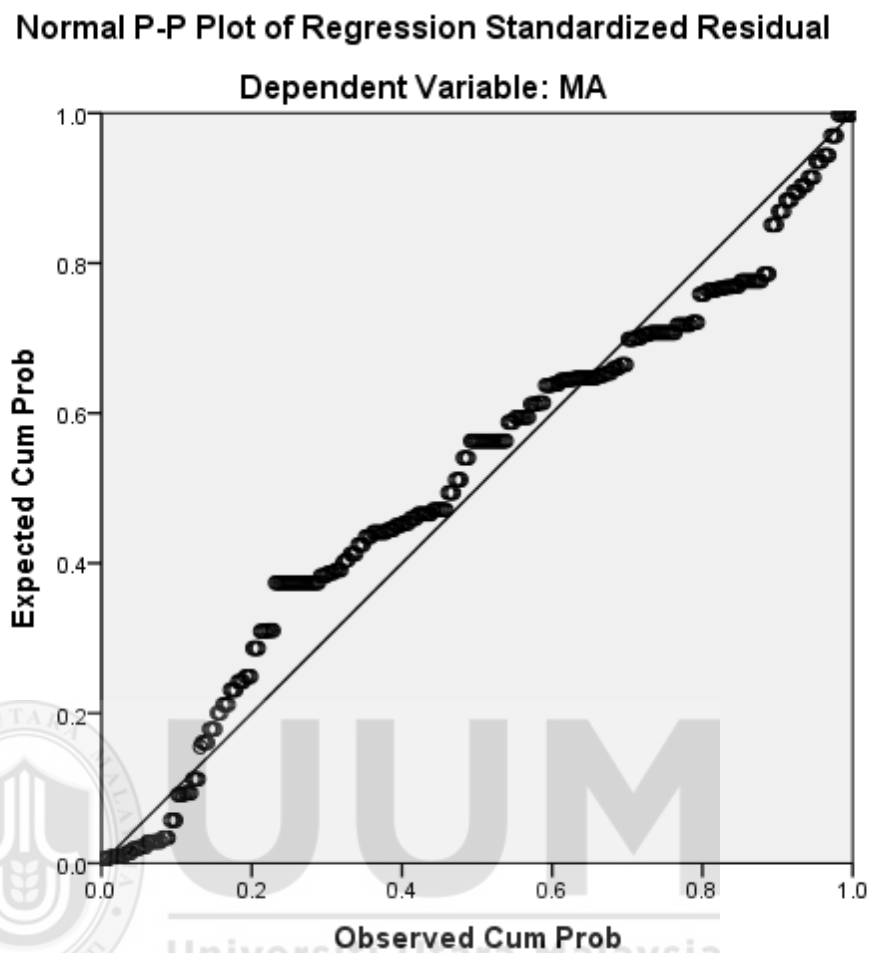




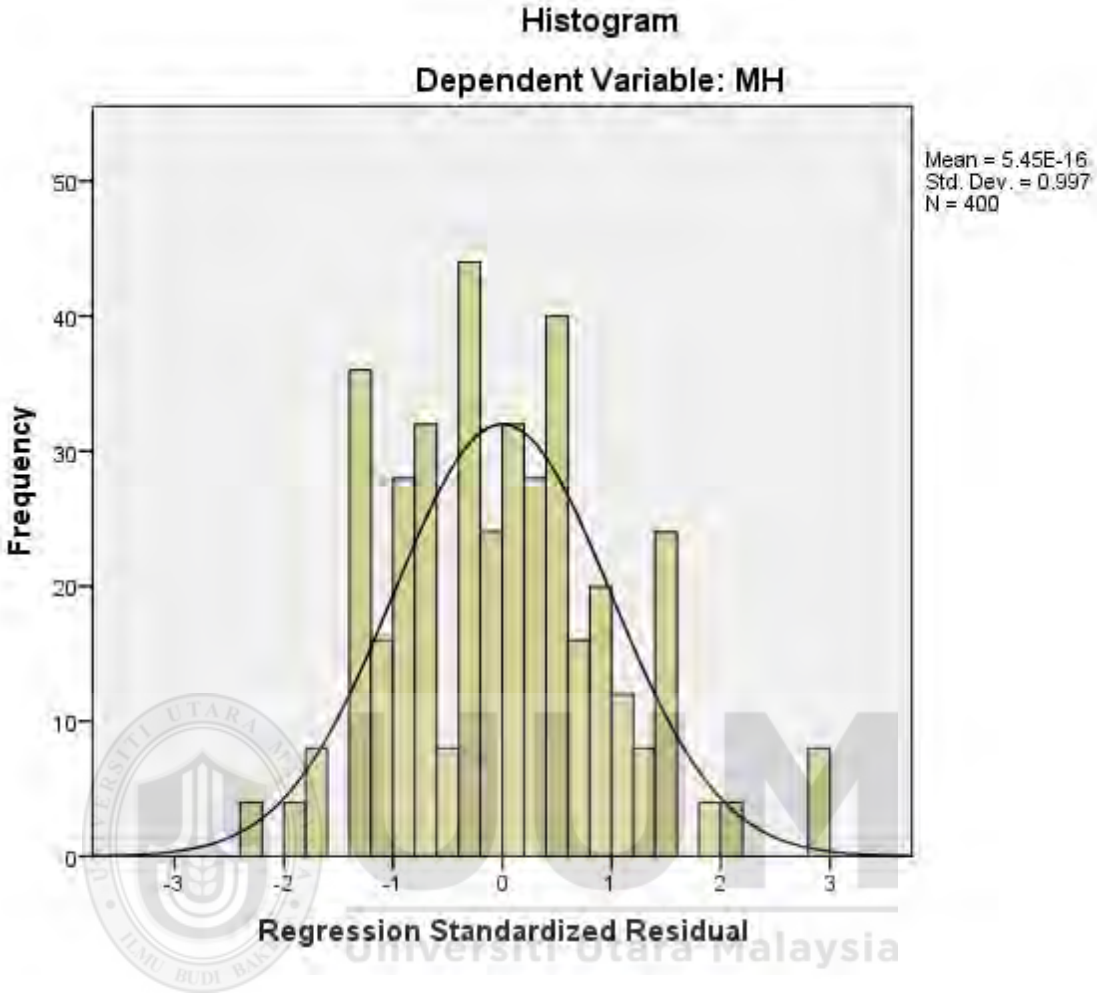


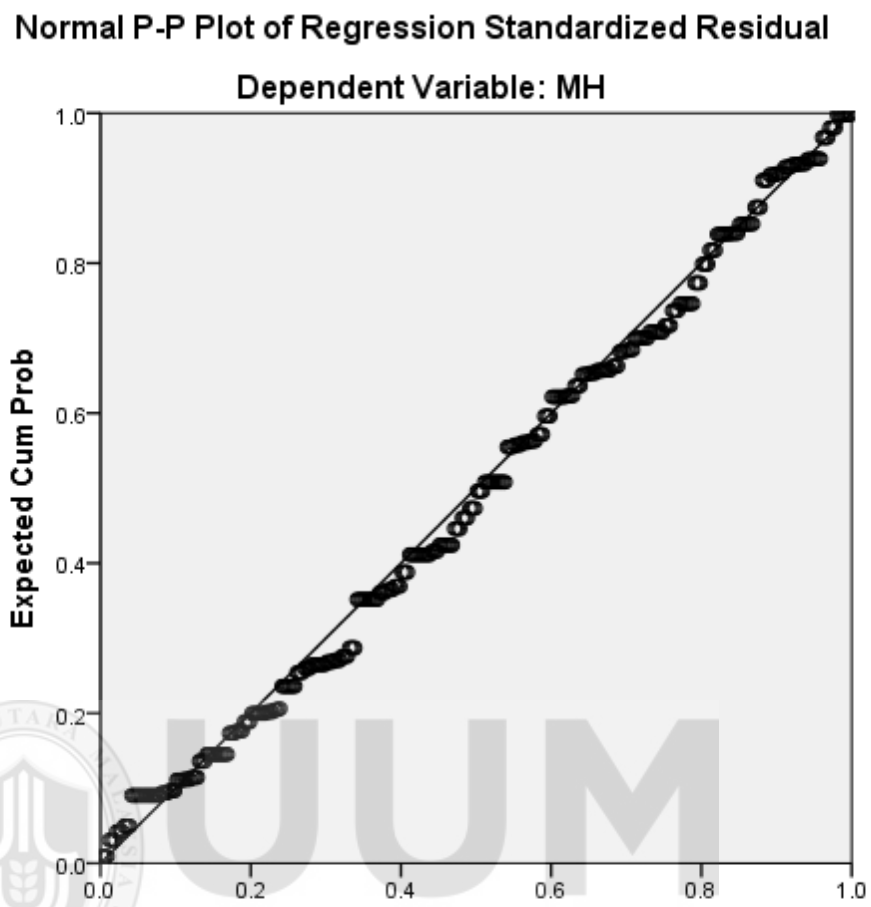
Normality for Agriculture





Normality for Health





Variables	N statistics	Skewness	Kurtosis
MP	400	.058	-974
ME	400	.592	-076
MA	400	-288	.665

MH	400	.270	.340
MED	400	-2.388	5.434
MN	400	-1.425	1.154
Valid N Listwise	400		

APPENDIX:D

Multiple regression between education infrastructure (independent variable) and poverty, employment, agricultural productivity, healthcare (rural development dependent variables) first Stage

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	EDU[b]	.	Enter

a. Dependent Variable: Poverty

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.037[a]	.001	-.001	.67912

a. Predictors: (Constant), EDU

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.245	1	.245	.531	.466[b]
	Residual	183.559	398	.461		
	Total	183.804	399			

a. Dependent Variable: Poverty

b. Predictors: (Constant), EDU

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.279	.169		13.522	.000
	EDU	-.030	.040	-.037	-.729	.466

a. Dependent Variable: Poverty

Employment

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	EDU[b]	.	Enter

a. Dependent Variable: Employment

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.343[a]	.117	.115	.66742

a. Predictors: (Constant), EDU

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.597	1	23.597	52.973	.000[b]
	Residual	177.289	398	.445		
	Total	200.886	399			

a. Dependent Variable: Employment

b. Predictors: (Constant), EDU

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.525	.166		9.211	.000
	EDU	.289	.040	.343	7.278	.000

Agricultural Productivity

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	EDU[b]	.	Enter

a. Dependent Variable: Agriculture

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.394[a]	.155	.153	.86104

a. Predictors: (Constant), EDU

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	54.118	1	54.118	72.995	.000[b]
	Residual	295.074	398	.741		
	Total	349.191	399			

a. Dependent Variable: Agriculture

b. Predictors: (Constant), EDU

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.209	.214		5.660	.000
	EDU	.438	.051	.394	8.544	.000

a. Dependent Variable: Agriculture

Healthcare

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	EDU[b]	.	Enter

a. Dependent Variable: Health

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.396[a]	.157	.155	.71964

a. Predictors: (Constant), EDU

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.350	1	38.350	74.053	.000[b]
	Residual	206.115	398	.518		
	Total	244.465	399			

a. Dependent Variable: Health

b. Predictors: (Constant), EDU

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.355	.179		7.591	.000
	EDU	.369	.043	.396	8.605	.000

a. Dependent Variable: Health

APPENDIX:E

Hierarchical result Second Stage

Poverty variable (dependent)

Model	Variables Entered	Variables Removed	Method
1	NGO[b]	.	Enter

a. Dependent Variable: Poverty

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.030[a]	.001	-.002	.67928

a. Predictors: (Constant), NGO

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.161	1	.161	.348	.556[b]

	Residual	183.643	398	.461		
	Total	183.804	399			

a. Dependent Variable: Poverty

b. Predictors: (Constant), NGO

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.076	.143		14.560	.000
	NGO	.022	.036	.030	.590	.556

a. Dependent Variable: Poverty

Employment

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	NGO[b]	.	Enter

a. Dependent Variable: Employment

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.280[a]	.078	.076	.68205

a. Predictors: (Constant), NGO

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.741	1	15.741	33.837	.000[b]
	Residual	185.146	398	.465		
	Total	200.886	399			

a. Dependent Variable: Employment

b. Predictors: (Constant), NGO

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.897	.143		13.246	.000
	NGO	.213	.037	.280	5.817	.000

a. Dependent Variable: Employment

Agricultural Productivity

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	NGO[b]	.	Enter

a. Dependent Variable: Agriculture

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.440[a]	.193	.191	.84134

a. Predictors: (Constant), NGO

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67.464	1	67.464	95.308	.000[b]
	Residual	281.727	398	.708		
	Total	349.191	399			

a. Dependent Variable: Agriculture

b. Predictors: (Constant), NGO

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.322	.177		7.485	.000
	NGO	.441	.045	.440	9.763	.000

a. Dependent Variable: Agriculture

Healthcare

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	NGO[b]	.	Enter

a. Dependent Variable: Health

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.411[a]	.169	.167	.71458

a. Predictors: (Constant), NGO

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.235	1	41.235	80.754	.000[b]
	Residual	203.230	398	.511		
	Total	244.465	399			

a. Dependent Variable: Health

b. Predictors: (Constant), NGO

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.551	.150		10.338	.000
	NGO	.345	.038	.411	8.986	.000

a. Dependent Variable: Health

APPENDIX:F

Hierarchical result Moderation

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	EDCVXNGOCV, NGO, EDU[b]	.	Enter

a. Dependent Variable: Poverty

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.264[a]	.070	.063	.65716

a. Predictors: (Constant), EDCVXNGOCV, NGO, EDU

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.789	3	4.263	9.871	.000[b]
	Residual	171.015	396	.432		
	Total	183.804	399			

a. Dependent Variable: Poverty

b. Predictors: (Constant), EDCVXNGOCV, NGO, EDU

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.447	.290		11.871	.000
	EDU	-.343	.072	-.425	-4.764	.000
	NGO	.052	.045	.072	1.163	.245
	EDCVXNGOCV	-.183	.035	-.427	-5.215	.000

a. Dependent Variable: Poverty

Employment

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	EDCVXNGOCV, NGO, EDU[b]	.	Enter

a. Dependent Variable: Employment

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.361[a]	.131	.124	.66410

a. Predictors: (Constant), EDCVXNGOCV, NGO, EDU

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.237	3	8.746	19.830	.000[b]
	Residual	174.649	396	.441		
	Total	200.886	399			

a. Dependent Variable: Employment

b. Predictors: (Constant), EDCVXNGOCV, NGO, EDU

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.064	.293		3.626	.000
	EDU	.315	.073	.372	4.323	.000
	NGO	.087	.045	.115	1.932	.054
	EDCVXNGOCV	.056	.035	.124	1.572	.117

a. Dependent Variable: Employment

Agricultural Productivity

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	EDCVXNGOCV, NGO, EDU[b]	.	Enter

a. Dependent Variable: Agriculture

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.498[a]	.248	.243	.81407

a. Predictors: (Constant), EDCVXNGOCV, NGO, EDU

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	86.756	3	28.919	43.636	.000[b]
	Residual	262.435	396	.663		
	Total	349.191	399			

a. Dependent Variable: Agriculture

b. Predictors: (Constant), EDCVXNGOCV, NGO, EDU

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.290	.360		-.808	.420
	EDU	.481	.089	.432	5.393	.000
	NGO	.327	.055	.326	5.897	.000
	EDCVXNGOCV	.175	.043	.296	4.023	.000

a. Dependent Variable: Agriculture

Healthcare

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	EDCVXNGOCV, NGO, EDU[b]	.	Enter

a. Dependent Variable: Health

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.474[a]	.225	.219	.69189

a. Predictors: (Constant), EDCVXNGOCV, NGO, EDU

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	54.897	3	18.299	38.226	.000[b]
	Residual	189.568	396	.479		
	Total	244.465	399			

a. Dependent Variable: Health

b. Predictors: (Constant), EDCVXNGOCV, NGO, EDU

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.280	.306		.915	.361
	EDU	.402	.076	.432	5.305	.000
	NGO	.232	.047	.276	4.917	.000
	EDCVXNGOCV	.126	.037	.255	3.406	.001

a. Dependent Variable: Health